43 PAGES...
Hard-Fact Data on Modernization...
Which Mills Are Modernizing...Why...Payoff

TEXTILE WORLD

'61 modernization

MAY 196
PRICE $1.00
A McGRAW-HILL PUBLICATION

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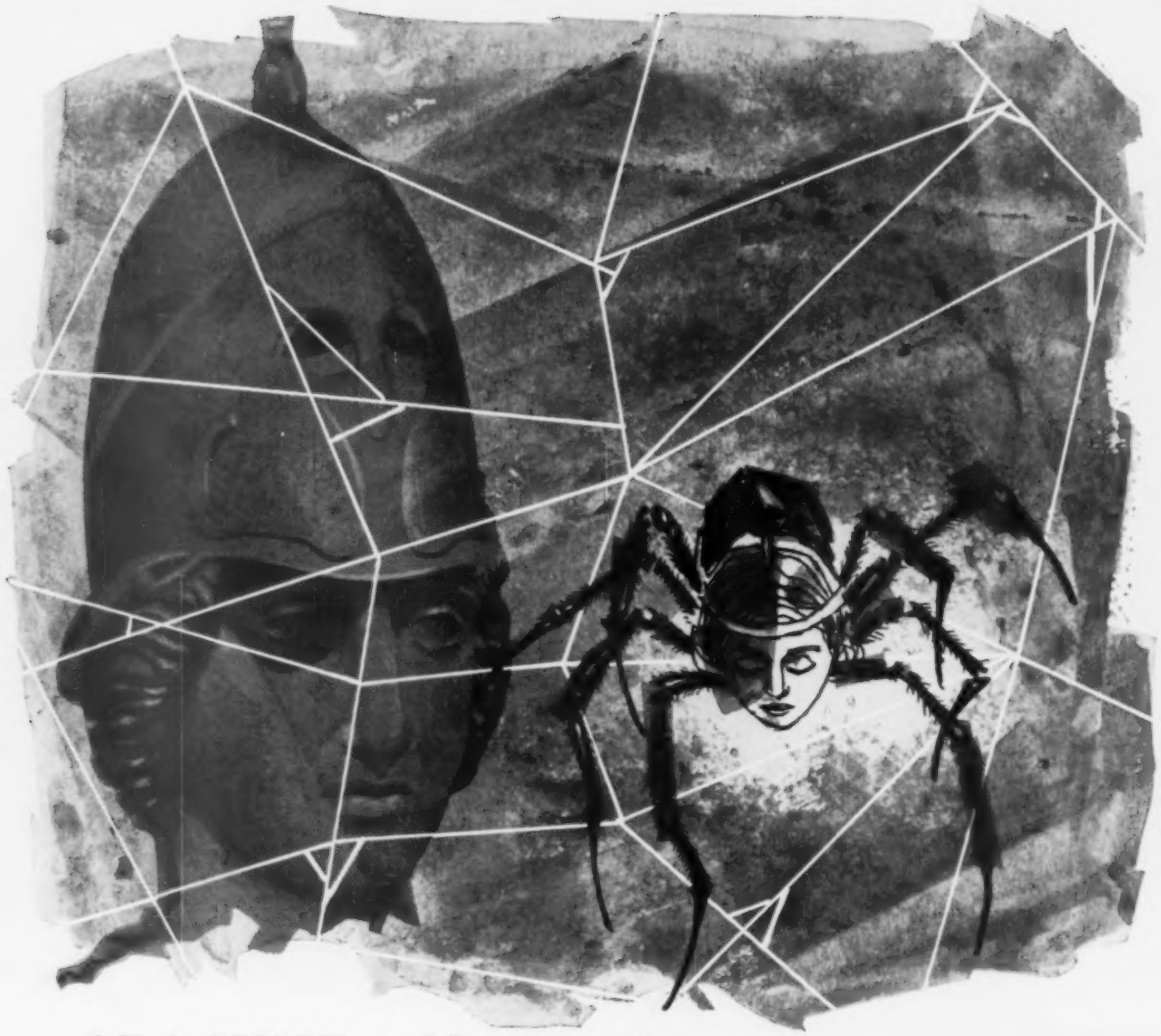


ARACHNE paid a penalty for making better textiles

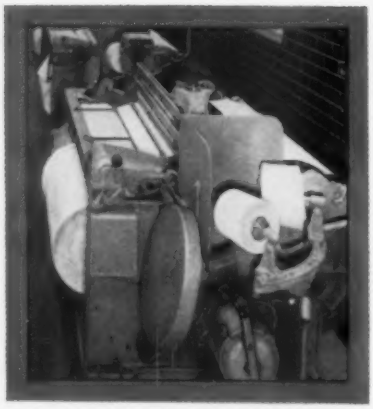
...but today you pay if you don't!

The peasant girl Arachne, mythology relates, defeated the goddess Minerva in a weaving contest—and wound up being changed into a spider (which zoologists ever since have called *arachnids*).

Today it works the other way around: the textile maker who turns out a better product receives not punishment but rich rewards. That's why so many money-makers in the field use Draper Looms powered by DIEHL transmitters.

DIEHL pioneered power transmitters for textile looms, has worked hand-in-hand with builders of textile machines for seventy-five years.

Take advantage of this long experience when you specify textile machinery, when you encounter drive problems of any *kind*. There's nothing mythical about the solid help that DIEHL can give you.



DRAPER Shuttleless Looms Powered by DIEHL Power Transmitters.

*** DIEHL MANUFACTURING COMPANY**

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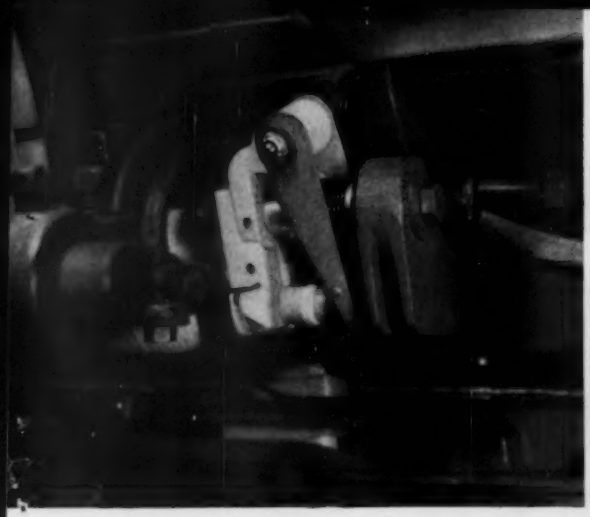
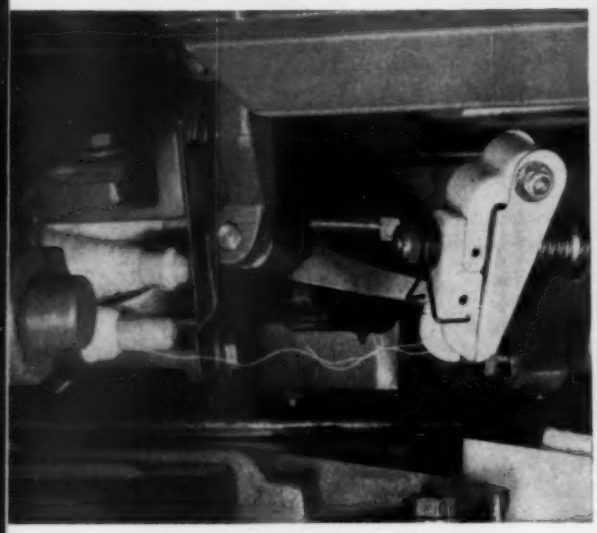


▲ EXTRACTOR HEAD ASSEMBLY MECHANICALLY
▼ EXTRACTS AND HOLDS THE TIP BUNCH.



New reasons why . . .

the Draper Automatic Filling Magazine offers greater mill savings

The Draper Automatic Filling Magazine with a new cam operated pivoting extractor and mechanical thread clearer eliminates the need for a vacuum system to clear the thread and the tip bunch of the incoming bobbin after transfer. This new construction reduces mill installation time and cost . . . simplifies maintenance . . . and improves cloth quality. *Consult your Draper representative for details on this and other advantages of the Draper Automatic Filling Magazine.*

DRAPER CORPORATION

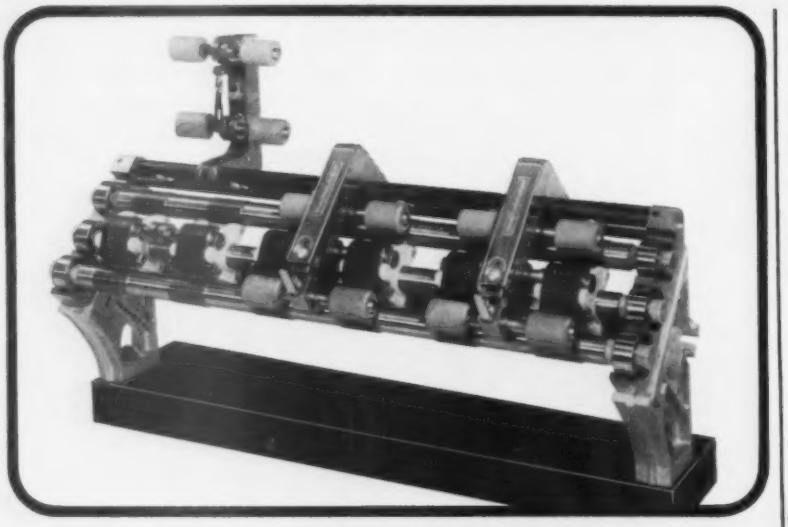
HOPEDALE, MASS. • ATLANTA, GA. • GREENSBORO, N. C. • SPARTANBURG, S. C.

YARN MAKING MACHINERY

ROBERTS NEWS

COTTON, WORSTED OR LONG FIBER SYSTEMS

Roberts FC Drafting System . . . Cleanest, Simplest, Best Yarn Quality



FC Drafting clears roll beam of all weighting attachments. Ball bearing bottom rolls on all three lines, shown above, are optional.

- Cleanest Running — Easiest to Clean
- Simplest — Fewest Number of Parts
- Highest Yarn Quality — Stronger, More Even Yarns
- Broadest Versatility — Cotton, Synthetics, Blends
- Short or Long Staple — Synthetics 1¾" to 3"
- Coarse or Fine Yarns — 2s to 120s
- High Draft — 10 through 60
- Cartridge Weighting
- Roll Beam Clean — No Weighting Attachments
- No Lever Screws, Weight Levers and Hooks, Dead Weights
- PosiWate Pendular Arm Suspension — Positive Weighting
- No Oil in Entire Drafting Zone
- 3 Lines Ball Bearing Top Rolls
- Ball Bearing Bottom Rolls Optional
- Hardened Bottom Rolls with EvenGrip Fluting
- Nylon Cradles with Choice of Pin Opening
- Reduces Weight on Frame by ¾ of a Ton

ROBERTS COMPANY **Sanford, North Carolina**

Arrow Spinning Frames for Cotton and Worsted Systems • Twisters and Roving Frames
Tow-Transformers • ParaBlenders • ParaDrafters • AutoEveners

Roberts Company has achieved a most precision made cotton spinning system with its FC Drafting. It is the cleanest running, and the simplest with the fewest number of parts. It consistently gives the highest yarn quality from spindle to spindle and from year to year.

Dramatically new and improved in FC Drafting is a cartridge weighting arrangement which eliminates all weighting attachments to the roll beam, disposing of the lever screw, weight lever, weight hook and dead weight.

Used instead is an enclosed spring cartridge attached to a cartridge bar fastened between roll stands. A simple lever is depressed to unweight or to weight up the top rolls. There are no short springs inside the pendular suspension.

WIDE VERSATILITY

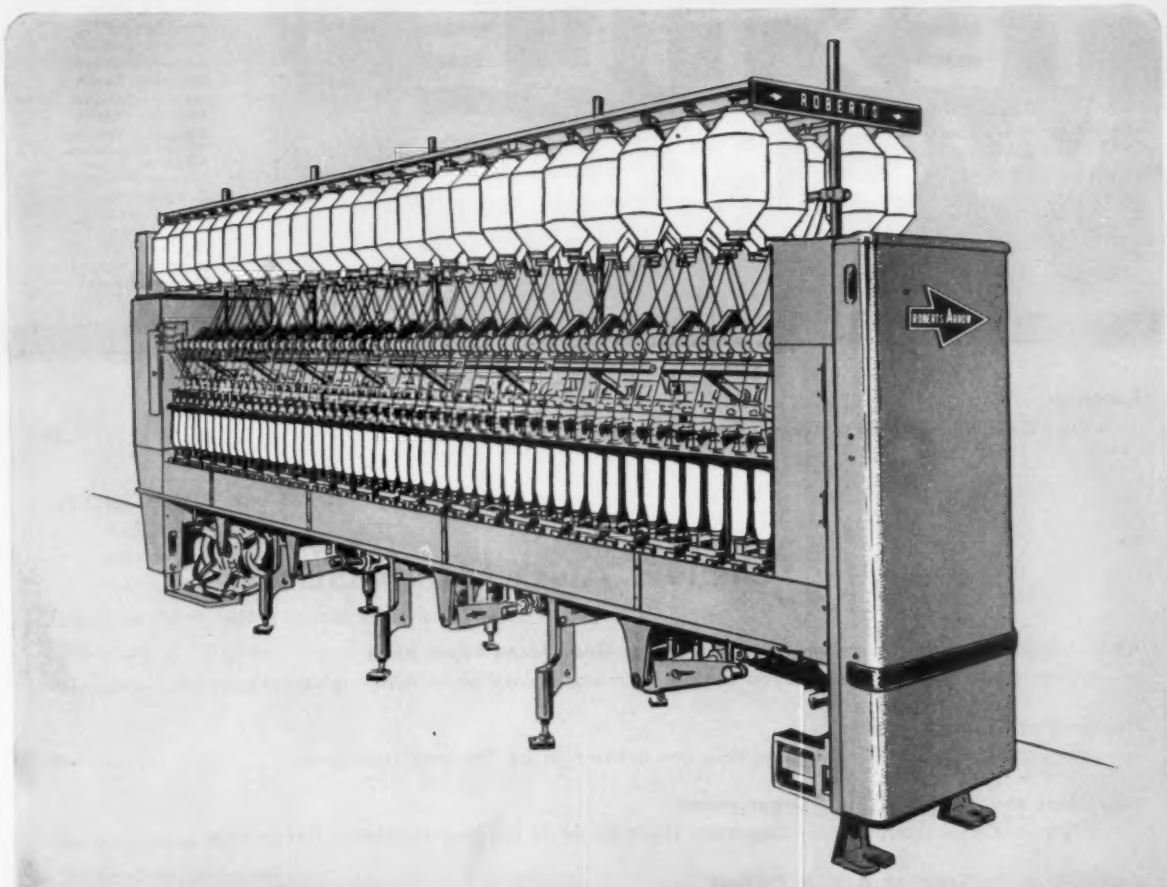
Coarse or fine yarns from 2s to 120s, cotton or synthetics and blends, and a broad range of drafts from 10 to 60, are efficiently handled by new FC Drafting.

Proper, efficient fiber control, fiber gripping and weight is provided without the limitations of other systems using short springs, weights or magnets.

FC Drafting can be arranged to handle short or long staple cotton, and synthetic fibers from 1⁹⁄₁₆" to 3" long. A choice of cradle lengths and solid or recessed apron top rolls provides this flexibility.

One arrangement handles cotton up to 1⅜₁₆" long and synthetic fibers 1⁹⁄₁₆". Recessed top apron rolls may be used for synthetics of 2" to 2½" long. Another arrangement handles regular running of long staple cotton up to 1⁹⁄₁₆", or synthetics of 2" and less. The recessed roll extends this to 3" synthetics.

Send for Bulletin. For further information on Roberts FC Drafting write for Technical Bulletin FC-101.



ROBERTS ARROW

ADVANCED ENGINEERING DESIGN
ATTRACTIVE LOW PRICE
PRACTICAL MILL OPERATION

1200 NEW ROBERTS ARROW Spinning Frames with some 380,000 spindles have been installed in mills since their introduction four years ago; dramatic testimony that Arrow Spinning does the job to mill satisfaction!

RUGGED, ALL BALL BEARING and free of gadgetry and frills, new Arrow Spinning has been refined and streamlined, and engineered for peak performance and dependability. Many technological improvements have been incorporated.

HIGHEST YARN QUALITY! With new FC Drafting cotton system spinning, Arrow Frames consistently spin stronger, more even yarns. Proper fiber control, gripping and weight assure superior yarn quality.

INCREASED SPEEDS! Spindle speeds to 15,000 r.p.m., dynamic balancing of all components, and maximum use of ball bearings provide increased production and economy, with smooth and dependable performance.

WIDER VERSATILITY! Coarse or fine yarns from 2s to 120s count, cotton or synthetics and blends, and a broad range of drafts from 10 to 60 are successfully handled. New Arrow Spinning spins short or long staple cotton, and synthetics from 1 1/16" to 3". Changes in fiber, yarn number, draft, twist and bobbin build are quickly accomplished.

REDUCED CLEANING, MAINTENANCE! Strictly functional, new Arrow Spinning has been engineered for trouble-free operation with reduced cleaning and maintenance. Simplification of components, and fewer parts provide quick, easy cleaning.

ROBERTS COMPANY
SANFORD, NORTH CAROLINA

CIRCLE 3 ON READER SERVICE CARD 3

TEXTILE WORLD

VOLUME 111, NO. 5 MAY 1961

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Coming Next Month:

Across-the-Board Reports on Textiles, 1961

June TEXTILE WORLD, like TEXTILE WORLD every month, will present a wide-ranging series of articles that will help you cut costs, improve operations right now. **Sample of June's timely, helpful articles:** A special report on the Georgia TOE meeting . . . How Villa Rica controls its knitting production . . . Why Phoenix Dye Works consolidated . . . Newest mill in the United States . . . Hitting soft spots in your costs . . . plus an authoritative, carefully edited first installment on the best new equipment shown at the Knitting Arts Exhibition.

Watch for June's TEXTILE WORLD.

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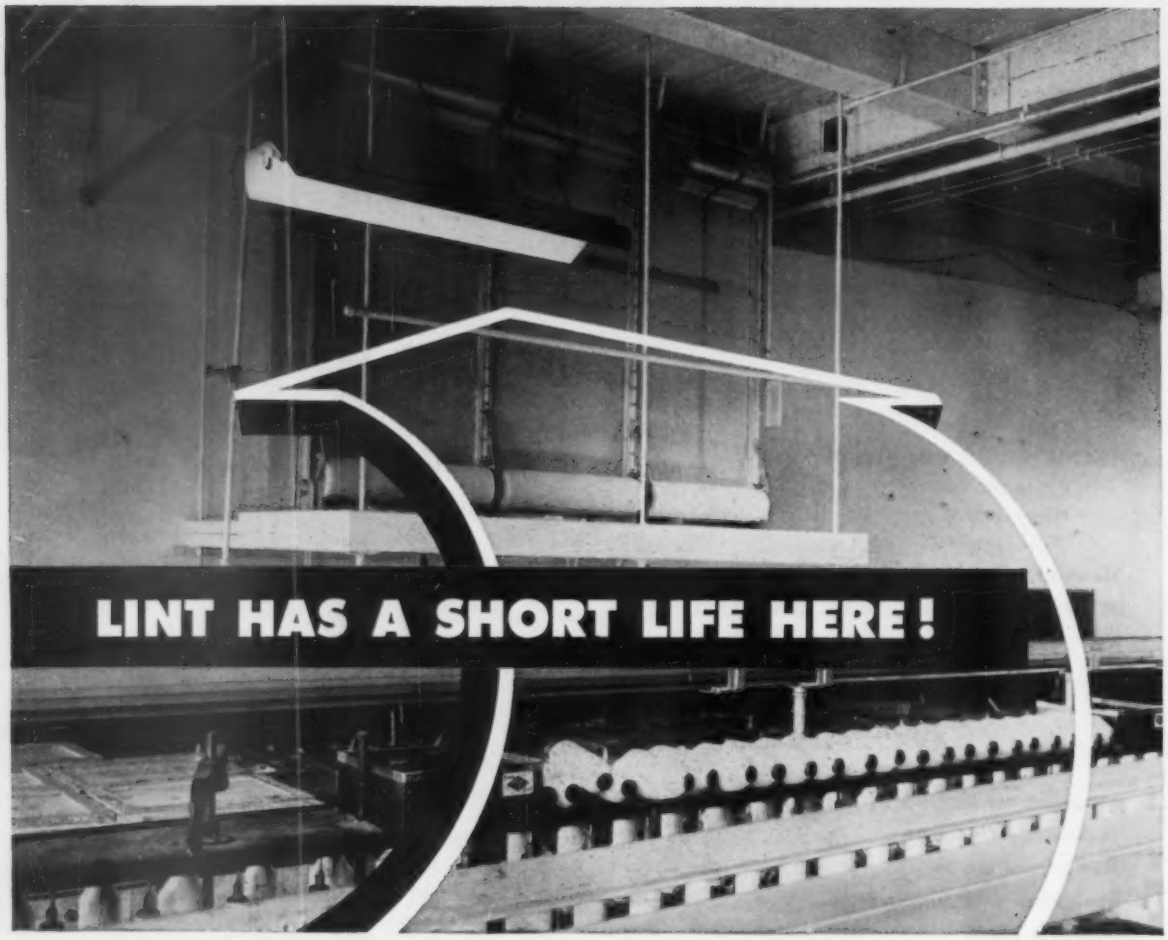


The spinning room at Pepperell Manufacturing Company, Lindale, Georgia.

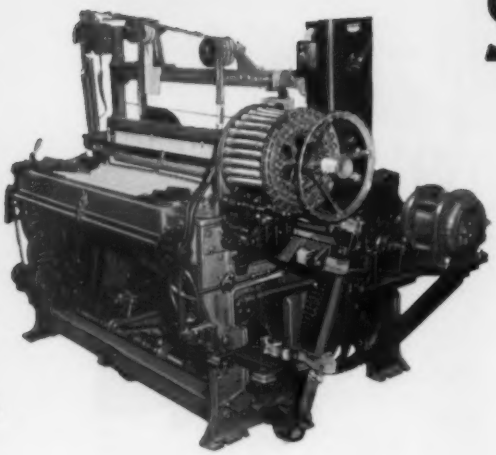
AAF Auto-AIRMAT filters "de-lint" air in spinning room at Pepperell's Lindale Mill

The fly created during spinning operations at Pepperell Manufacturing Company, Lindale (Georgia) Division, never gets any further than the bank of Auto-AIRMAT filters mounted in the wall. Nothing but lint-free air gets beyond the Auto-AIRMATS to important yarn-processing operations in the next room.

The AAF Auto-AIRMAT is the *only* filter designed to remove fly from the air and clean itself at the same time. Airmat filtering material, winding from roll at top of unit, moves automatically down the face of the filter, collecting lint all the way—re-winds into easily disposable roll at bottom.

If you have a *lint problem,* get all the facts on the *lint filter*—the AAF Auto-AIRMAT. Call your AAF representative or write direct for Bulletin 234. Address: Mr. Robert Moore, American Air Filter Company, Inc., 304 Central Avenue, Louisville, Kentucky.

AAF American Air Filter
BETTER AIR IS OUR BUSINESS



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presents

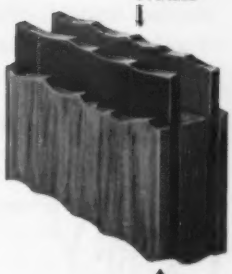
The REINFORCED
DURAWELD
PICKER STICK

with this Unexcelled Combination . . . . .
Strength and Whip, plus Resistance to Warping

Here is another Stehedco *exclusive* . . . a picker stick that gives you advantages never before available.

- ★ DURAWELD Picker Sticks are made of multiple laminated veneers of *high grade hickory* reinforced with veneers of vulcanized fiber, permanently bonded with phenolic adhesive into a uniform panel.
- ★ This construction gives DURAWELD Picker Sticks far *greater strength* while retaining the desired *"whip"* for high-speed looms.
- ★ These laminated, reinforced picker sticks are much *less susceptible to warping* than ordinary picker sticks.
- ★ Stehedco DURAWELD Picker Sticks will pay for themselves many, many times with *superior performance* and *longer life*.
- ★ Designed for high-speed Draper looms, these picker sticks also give superior performance on slower single box and light multiple box looms.
- ★ The exposed, or nearly exposed, fiber at the picker end of the stick provides greater wear resistance to the lay end slot.

Invest in Reinforced DURAWELD Picker Sticks now and start counting your savings.



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CIRCLE 7 ON READER SERVICE CARD

SACM

SACM-PERL
combs everything

worsteds
synthetics
wastes
blends-etc.

The PERL Rectilinear Comb has proven in production that it will comb wool at high speeds without a burr-knife, and give more production with an equal or higher quality than any other French type Comb in production.

The exceptional versatility of the PERL Comb was illustrated at recent exhibitions where visitors were impressed to see simultaneous combing of nylon waste and wool while BLENDING right on the Comb. Four types of creels are available; a new can creel gives positive and accurate control of the feeding slivers and blends them into an even web for presentation to the nipper, a new lap feeding device contributes towards economies in labor, a standard model can creel and a standard model bobbin creel.

A unique engineering feature, providing *quick adjustment of web tension* at delivery without stopping the machine, greatly reduces work and down time. The machine is designed for easy application of automatic continuous noil removal if desired. Minimum floor space requirements, extra large can delivery (up to 24" dia.) provide lower production costs.

No one makes a French Comb like the French and you will find no substitute for the advanced engineering, experience and quality incorporated in the PERL Comb. SACM has more than 10,000 rectilinear combs in operation in the world!

Ask to see a demonstration and production figures of the PERL Comb. You will be surprised at the low cost of French Combing made possible by this new equipment.

Société Alsacienne de Constructions Mécaniques
Mulhouse, France

IN THE U.S.A. SALES & SERVICE FOR THE COMPLETE LINE OF SACM WORSTED MACHINERY ARE PROVIDED BY

ATKINSON, HASERICK & CO., INC.

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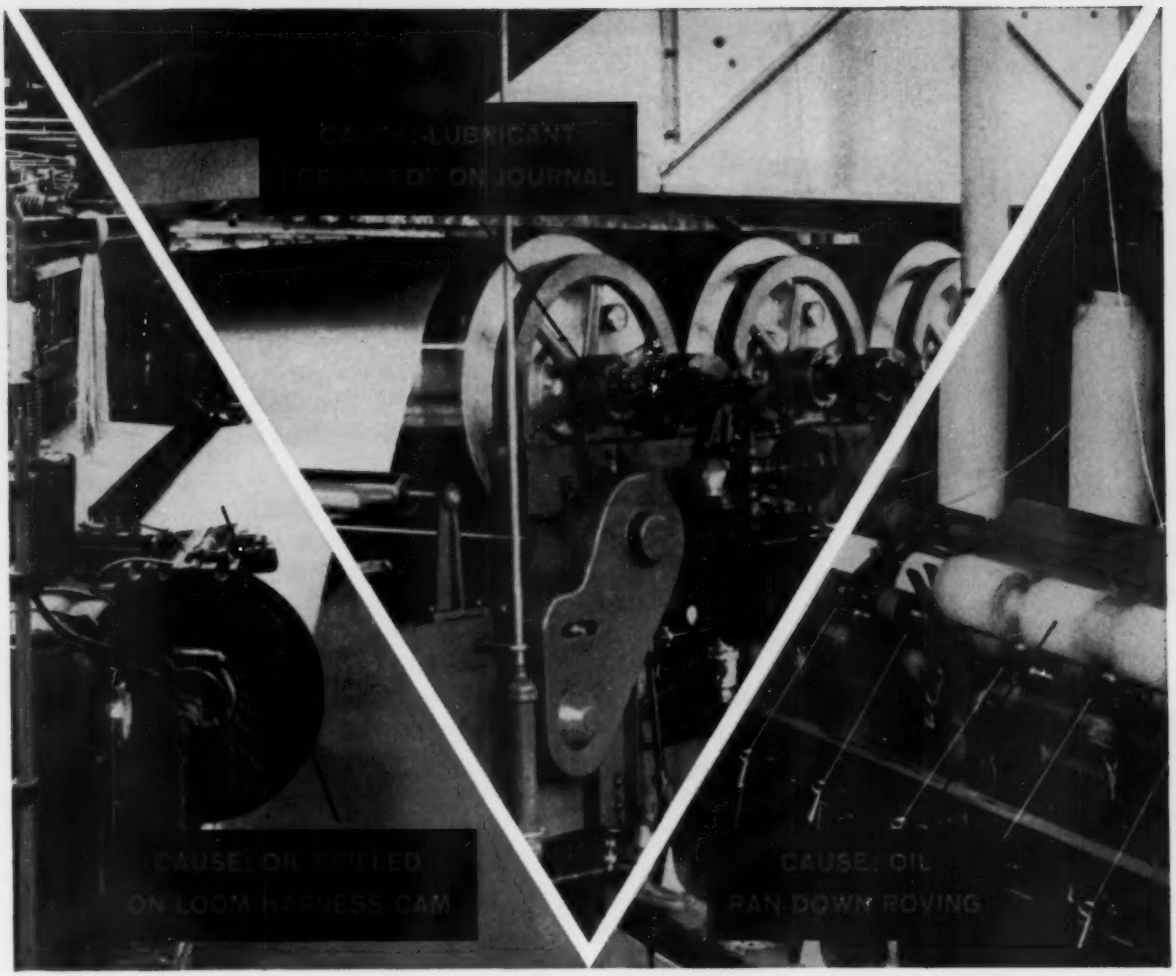

Texaco's "Stop Loss" Program can help you

STOP "SECONDS" WHERE THEY START!

You should be able to add up to 4% to your net profit simply by adopting Texaco's "Stop Loss" program. It is especially designed to stop contamination where it starts. Thus it can reduce oil spoilage and cut maintenance costs.

"Stop Loss" is a complete program, designed to help you realize all the savings available through organized lubrication. It provides (1) a detailed study of your mill's lubrication requirements—every department, machine, oil cup and grease fitting, (2) recommendations for a lubrication program fitted to your mill's needs, and (3) the basic "tools" needed to set up this program and make it work effectively and inexpensively for you.

But see for yourself how "Stop Loss" works! See our new film, "Stop Loss with Organized Lubrication," which dramatically presents new opportunities for savings. Make sure you see it soon—mail this coupon today!

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I would like to see your new movie "Stop Loss with Organized Lubrication." Please call to arrange a showing.

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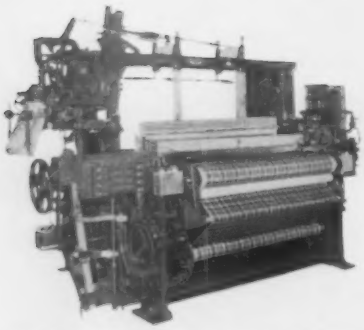


QSEWMT

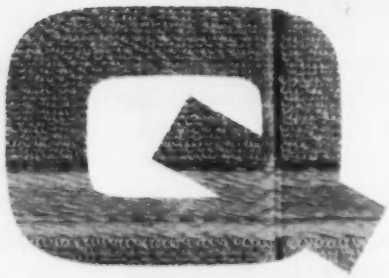
QUALITY OF CLOTH · SPEED OF LOOM
EFFICIENCY · WEAVER ACCEPTANCE
MAINTENANCE COSTS · TRAINING TIME

BETTER QUALITY FABRICS are produced on the C-7 because improvements engineered into the loom substantially reduce the weaver's job operations and physical effort and help eliminate many types of cloth defects.

With fewer duties to perform the weaver has more time for inspection and defect prevention. Reduced physical effort means he is less fatigued, so is more alert to make better cloth through the whole shift.

Unfailing performance of protection devices insures high quality fabric and lessens profit-reducing seconds. Simplified stop motions mean fewer undetected broken ends and broken picks. No going over front center on a filling break. Electric protection provides gentle smash prevention. The transmitter drive reduces start-up marks. Double link binders give more uniform filling tension, smoother weaving and shiner prevention.

Loom for loom the versatile C-7 weaves better cloth, and improving quality increases profits. Write for the illustrated folder "Gain the Competitive Edge" for technical details.



CROMPTON & KNOWLES CORPORATION

WORCESTER, MASSACHUSETTS

C&K

WORLD LEADERSHIP IN AUTOMATIC BOX LOOMS–RESEARCH–ENGINEERING–MANUFACTURE

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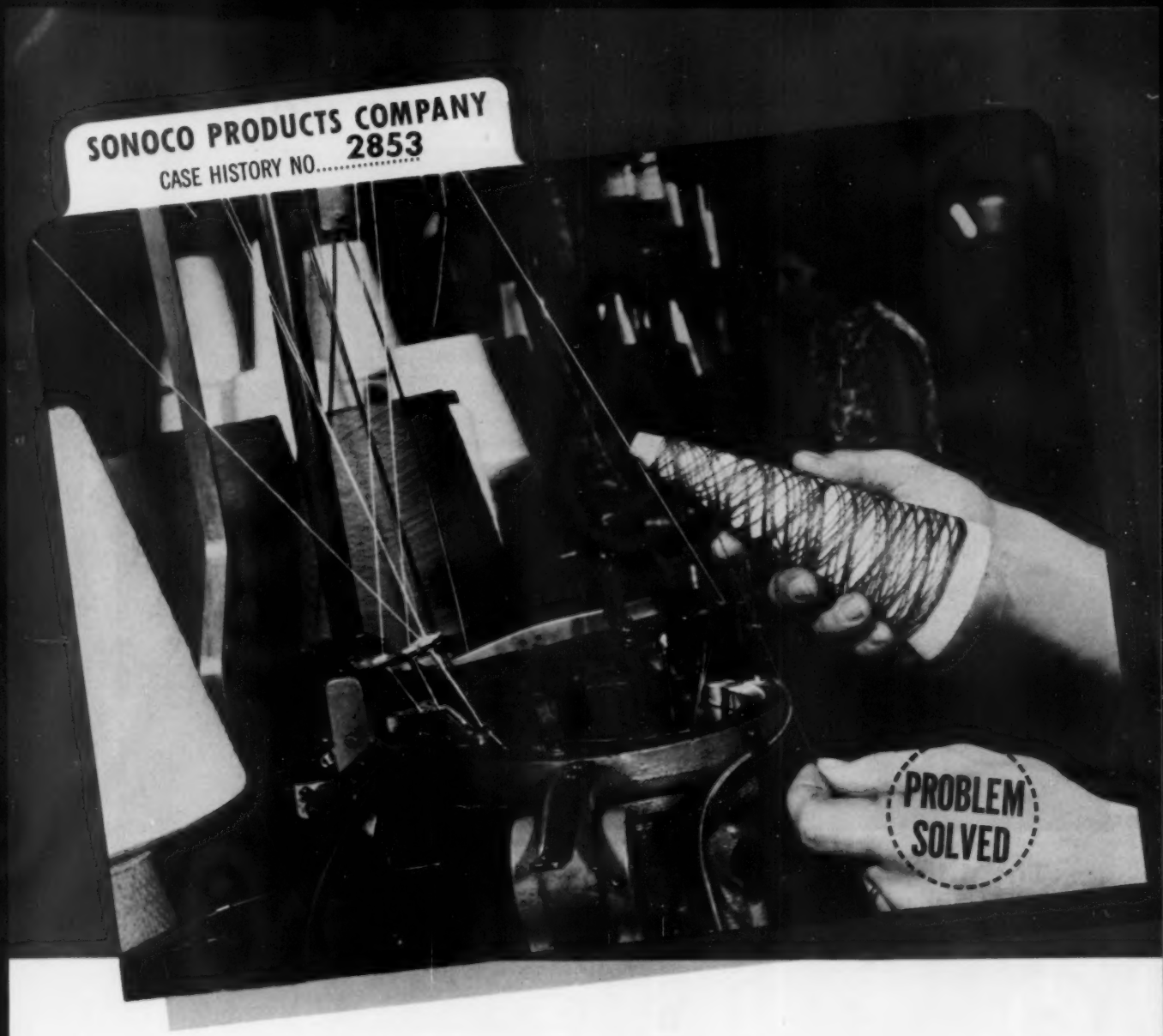

PROBLEM: Cones for use in accelerated conditioning of yarn

Equipment which accelerates the cycle of yarn conditioning is an outstanding example of industry progress. However, the introduction of this equipment created two problems. Because of the excessive amount of moisture, cone walls were breaking down and the primary winds were sticking to the cones. To eliminate these problems a cone was required with a surface to which the yarn would not stick and which would withstand the effects of the additional moisture.

Sonoco research solved these problems quickly by proving conclusively that only Unitex Surface cones should be used in this method of processing. Use of this type cone has eliminated the difficulties first encountered through the use of accelerated cycle yarn conditioning equipment.

Technical service of this type is an added benefit when you buy from Sonoco. *Only Sonoco,* in its field, provides the continuous research, product development and integrated manufacturing needed to meet the ever-changing techniques of the textile industry. Let Sonoco's more than 60 years' experience help you!

SONOCO
Products for Textiles

sonoco
CAPTIVE THE QUALITY
PAPER PRODUCTS

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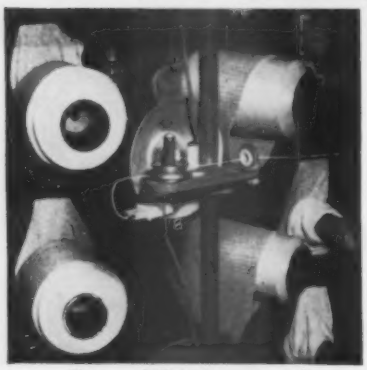
"No more tight ends in our warps"

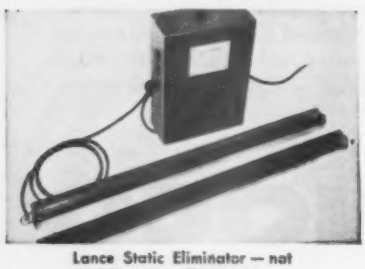
Photo of Yarn Inspector, Electrotense and Static Eliminator at Wm. Skinner & Sons

The LINDLY Electronic Triumvirate Gets the Credit

YARN INSPECTOR – ELECTROTENSE – STATIC ELIMINATOR



Closeup of Electrotense in creel.



Lance Static Eliminator — not visible in installation photo.

When we asked William Skinner & Sons, Holyoke, Mass. for a report on their installation of a Lindly Automatic Warp Yarn Inspector, the Lindy Electrotense in their creel and a Lindy Static Eliminator, their answer was prompt and enthusiastic: "No more tight ends in our warps."

However, when we asked them to go back temporarily to warping without the Lindly controls, so we could get some comparative "before" data, they flatly refused. "Why should we go through that again, when we don't have to?" they asked, and we can't blame them.

Since Skinner didn't need comparative data to prove the value of the Lindly Electronic Triumvirate, we doubt if you would either. So why not try an installation? Here's what the triumvirate is and does:

THE LINDLY AUTOMATIC YARN INSPECTOR is a high-speed, ultra sensitive photo-electric instrument for detecting yarn defects in warps, such as broken filaments, strip-backs and fluff balls. It can be made to operate a counter, a signalling device, or to actuate a machine stop switch — singly or in combination for any degree of imperfection.

THE LINDLY ELECTROTENSE for warp creels, winders, twisters, knitting machines, etc. provides completely uniform tension for any number of ends and the tension for all ends can be varied by turning only **one** dial. It consists of two conventional discs with an electromagnetic coil beneath. The lower disc is of non-magnetic brass, while the upper disc is of magnetic iron. When the coil is energized through a central electronic control, the upper disc is attracted downward, pressing the yarn between it and the lower disc in any degree desired. The pressure is pulsating, which prevents backup of twist and helps keep the tension discs clean and free turning.

LANCE STATIC ELIMINATOR, made in a variety of models, has a textile application wherever static electricity is a problem. It carries a high voltage discharge from pointed electrodes into the air, causing the fibre to be surrounded by ionized air, which serves to discharge the static electricity accumulated all around the surface of the fibre. Whereas the voltage is high enough to ionize effectively the air, it cannot harm the operator, who accidentally comes in contact with the electrodes.

See Lindly Electronic Products at Foster Booth 43—Knitting Arts Exposition.

FOSTER MACHINE COMPANY

ELECTRONIC SALES DIVISION, DEPARTMENT TW-5

Westfield, Massachusetts, U.S.A.

Southern Office, Johnston Bldg., Charlotte, N. C.

468-0

spinning

INGOLSTADT SPINNING MACHINERY FOR COTTON, WORSTED, ARTIFICIAL AND SYNTHETIC STAPLE FIBRES

MAK CARD SETS · MAK-WAGENSPINNER (SELF-ACTING MULES) MAK-STANDSPINNER (SEMI-FIX MULES) RING SPINNING FRAMES · MACHINES FOR THE WADDING INDUSTRY AND THE PRODUCTION OF SPECIAL WEBS

weaving and

Schlafhorst MACHINES FOR PIRN AND CONE WINDING AND WARPING (FULL-WIDTH AND SECTIONAL)

Sucker SIZING MACHINES • SIZE COOKING PLANTS

Astra WEAVING LOOMS FOR COTTON AND WOLLEN GOODS, SPECIAL-FABRICS, JACQUARD FABRICS AND PAPERMAKER FELTS

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MONFORTS FINISHING AND CLOTH ROOM MACHINERY FOR ALL KINDS OF FABRICS

UNIONMATEX MACHINES THROUGHOUT THE WORLD

Individual Machines and Complete Installations for the Textile Industry

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CIRCLE 13 ON READER SERVICE CARD

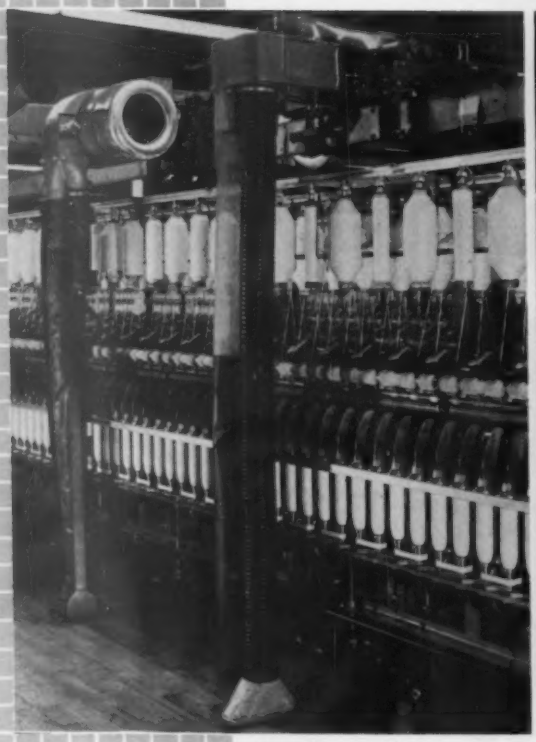
NET

For: Roving • Spinning • Twisting
Winding • Spooling • Weaving
And other textile machinery
***plus* specialized ceiling cleaning.**

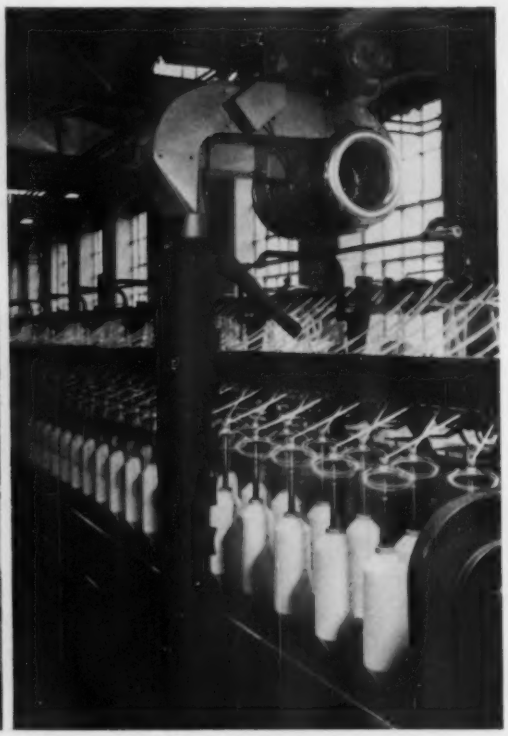
Bahnson TRAVELING CLEANERS

Have *Specialized Features* and *Custom Engineering* to provide maximum cleaning efficiency in specific mill areas

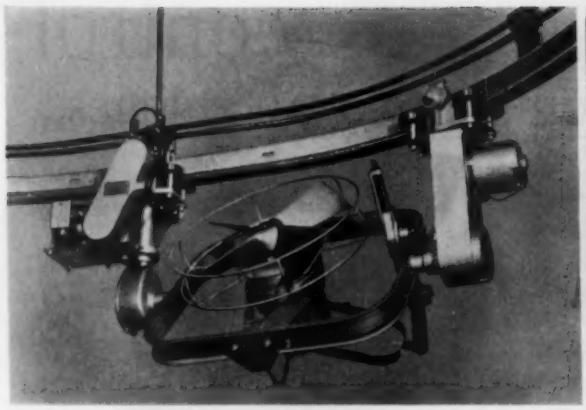
Bahnson's complete line of cleaners fits modern textile processing requirements. Individually designed to do a specialized job in the particular area where it is installed, each Bahnson Cleaner has proven efficiency in use. Each operates automatically to cut manual cleaning and improve production quality resulting in considerably reduced costs. Complete data on each cleaner is available in informative, illustrated bulletins. Write us for details on all Bahnson Cleaners or the individual cleaner of interest to you.



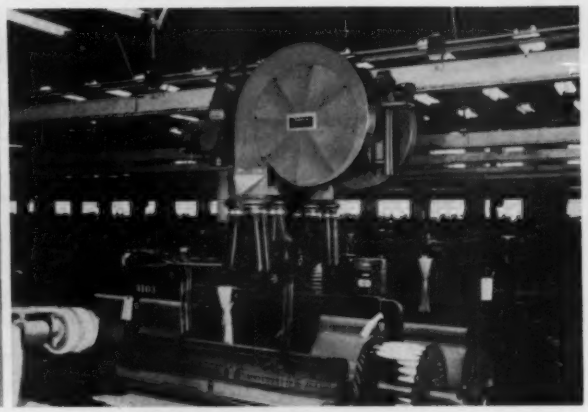
For Cleaner Floors:
Vacu-Pak Traveling Floor Sweeper
Write for Catalog 33-A



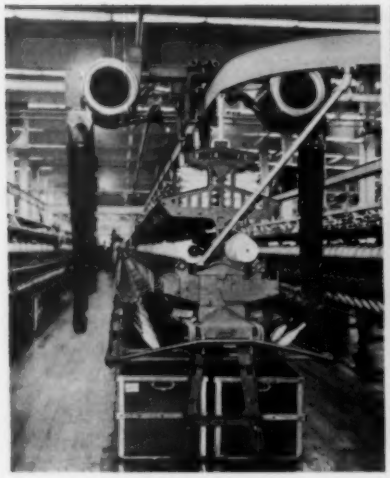
For Roving Frames:
Rov-Aire Traveling Cleaner
Write for Catalog 35-A



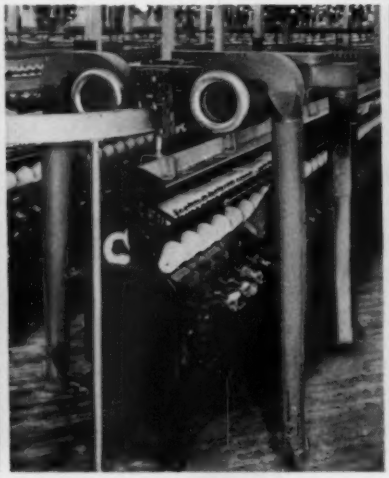
For Ceilings, Walls, Overhead Areas:
Aero-Sweep Traveling Cleaner
Write for Catalog 21-A



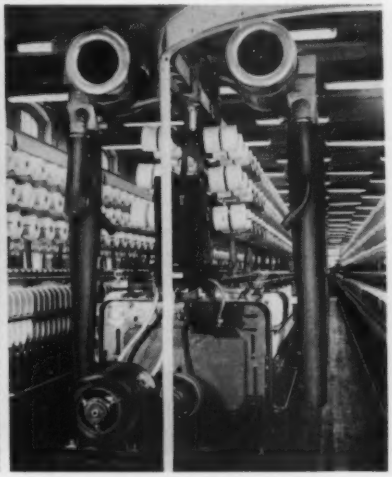
For Looms and Weave Rooms:
Duo-Blast Traveling Cleaner
Write for Catalog 37-A



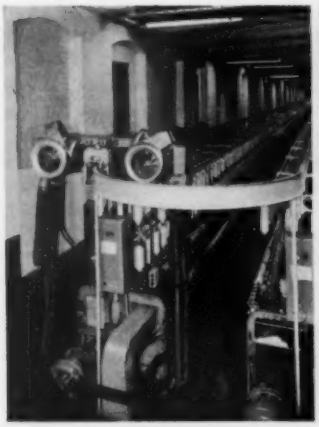
For Leesona Winders:
Cross-Jet Traveling Cleaner
Write for Catalog 32-A



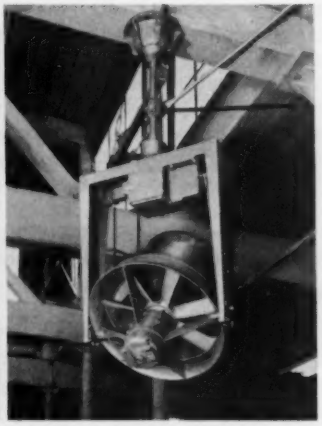
For Foster #102 Winders:
Cross-Jet Traveling Cleaner
and **Vacu-Pak** Floor Sweeper
Write for Catalogs 32-A and 33-A



For Twisting Frames:
Cross-Jet Traveling Cleaner
Write for Catalog 32-A



For Spinning Frames:
Cross-Jet Traveling Cleaner
Write for Catalog 32-A



For Fixed Overhead Cleaning:
Circulaire Overhead Cleaner
Write for Catalog 34-A

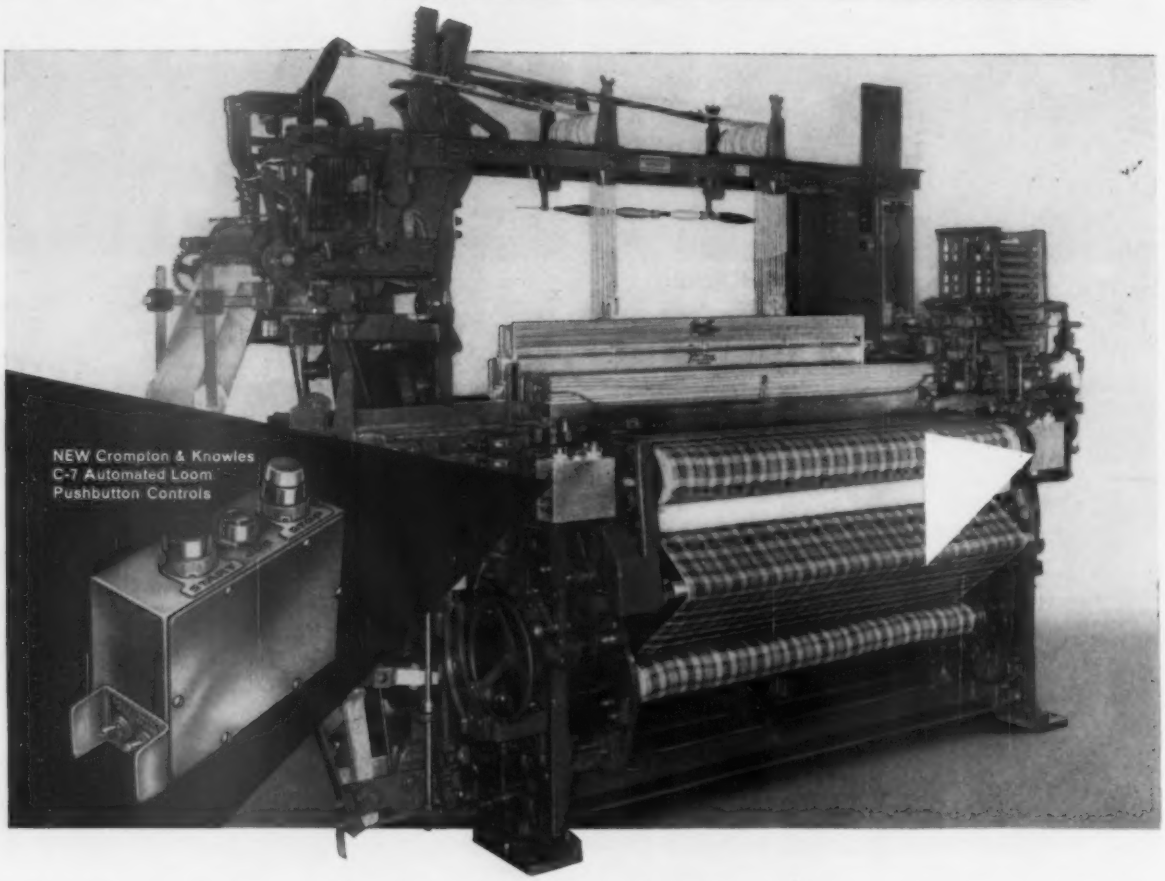
Bahnson

AIR-O-MATION

THE BAHNSON COMPANY

WINSTON-SALEM, N. C., U. S. A.

Warner electric motion control
gives new loom major competitive advantages



Electric sensing and controlling directly through an electromagnetic drive made possible by Warner Electric Brakes and Clutches

Advantage! Remote pushbutton actuation of Warner electric brakes and clutches permits fast starts, easy start-stop or reverse. Pushbutton control is at operator's fingertips at each end of loom.

Advantage! Electric brake and clutch plus electric protection eliminates a major cause of loom breakage, allows speed with protection, provides flywheel effect for steady, high-speed operation.

Advantage! In case of power failure a capacitor in the control system stores adequate energy to operate brake in *safe* cycle *only*. In normal operation this capacitor overexcites the brake magnet, makes possible rapid operation.

Advantage! All mechanical linkages are eliminated, reducing maintenance. With fewer duties to perform, even inexperienced weavers can operate this loom safely at high speeds, make better cloth.

Alert textile men are looking

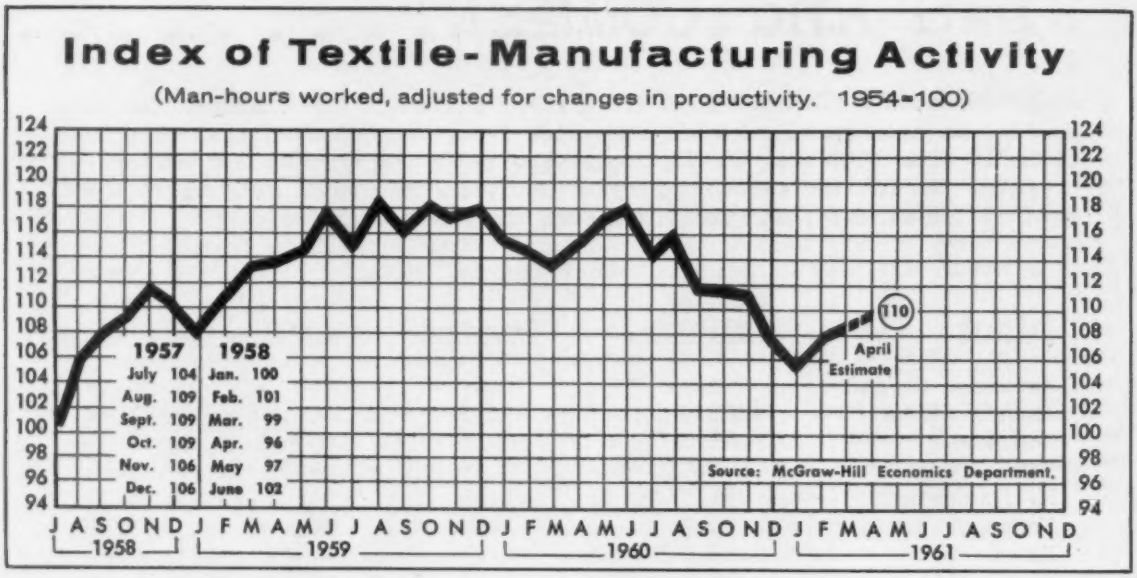
at textile machinery controls that give them a "competitive edge." Warner "electric motion control" provides direct electric actuation, easier control, greater automaticity, and many other advantages you will need on your present and future mill equipment. Write to Warner today for full details and technical data.

WARNER ELECTRIC

WARNER ELECTRIC

Warner Electric Brake & Clutch Co., Beloit, Wisconsin

Stocked by Distributors in Principal Cities Throughout the World



Index Rises Again

The chart above clearly shows the good news for textile manufacturers. For the second consecutive month, TEXTILE WORLD's index of textile manufacturing activity has forged ahead.

●

In addition, there was a spate of other good business news in March. Personal income rose $3.4 billion, swollen partly by a stepped-up rate of payments on National Service Life Insurance. Even without the earlier life insurance dividends, however, personal income was $1.6 billion larger in March than in the previous month. Commodity-producing industries added $1.1 billion to the income stream, and the remaining increase was provided largely by transfer payments and by business and professional income. Rising consumer spending power is a must for a vigorous business recovery, so the March statistic is particularly important because it reverses the long downward slide that began last November.

●

Another indicator of general prosperity, total civilian employment (figures at right), turned in a good March performance. Jobs were up by 800,000 and there were 1.2 million more people at work this year than last. With more people working and the flow of personal income rising, consumer sales during the coming months should continue the vigor of the past few months.

Figures of the Month

TEXTILE-INDUSTRY INDICATORS

	Latest Month	Previous Month	Year Ago
TEXTILE WORLD'S Exclusive Index (chart above)	109	108	114
Employment (thousands)[1]	898.3	898.8	956.2
Production Workers (thousands)[1]	804.9	806.1	863.0
Weekly Earnings[1]	63.24	62.76	63.83
Hourly Earnings[1]	1.63	1.63	1.62
Weekly Hours Worked[1]	38.8	38.5	39.4
Production Index (1957=100)[2]	104	102	111
Wholesale Price Index (1947-49=100)[3]	94.7	94.8	96.3
Manufacturers' Sales (million $)[2]	1.09*	1.08	1.26
Manufacturers' Inventories (million $)[2]	2.73*	2.70	2.65
Inventories-to-Sales Ratio	2.50*	2.50	2.10
Exports (million $)[2]	168.7*	189.8	165.4
Imports (million $)[2]	80.1*	104.6	111.1
Stock Price Index (1941-43=10)[4]	29.65	27.89	27.99
Failures (numbers)[5]	13	12	12

NATIONAL ECONOMIC INDICATORS

Industrial Production (1957=100)[2]	102	102	109
Consumer Price Index (1947-49=100)[3]	127.6	127.5	125.7
Wholesale Price Index (1947-49=100)[3]	119.8	119.9	120.0
Civilian Population (millions)[6]	180.3	180.0	177.1
Unemployment (millions)[6]	5.5	5.7	4.2
Employment (millions)[6]	65.5	64.7	64.3
Personal Income (billion $)[2]†	409.6	405.9	397.0

* March; otherwise latest month is February.

1. Bureau of Labor Statistics; 2. Federal Reserve Board; 3. Department of Commerce; 4. Standard & Poors; 5. Dun & Bradstreet; 6. Bureau of the Census; † Annual rate.

NEWS and COMMENT. . . . . .

EARNINGS REPORTS RELEASED IN APRIL OFFERED LITTLE TO CHEER ABOUT. As far as 1960 is concerned, sales of companies reporting below changed only fractionally from 1959 but, on the whole, profits swung more widely, either up or down. As for the first quarter of 1961, the pluses in sales just about equaled the minuses, and profits showed unwelcome weakness.

Company	Sales ($1,000's)	Change from Year Ago	Earnings ($1,000's)	Change from Year Ago
Year 1960				
American Thread	n.a.	n.a.	$663	-50.3%
Cannon Mills	$202,939	-3.3%	13,072	-21.7%
Amerace	27,696	+8.1%	2,658	+22.6%
Firth Carpet	22,436	-6.0%	(1,893)	-432.1%
M. Lowenstein	451,574	+1.9%	5,512	+7.1%
McGregor-Doniger	49,366	-1.0%	473	-72.3%
Bates	35,819	-6.1%	1,052	-17.1%
Flagg-Utica	10,989	+0.1%	388	-15.8%
United Piece Dye	7,194	-2.5%	145	-57.0%
Springs Cotton	187,649	+1.8%	18,730	+36.0%
Latest 6 Months				
West Point Mfg.	69,977	-12.3%	2,784	-32.0%
Latest Quarter				
Jonathan Logan	11,587	+72 %	591	+39.4%
Van Raalte	8,317	-6 %	536	-12.2%
J. P. Stevens	98,250	-14.4%	1,739	-59.1%
Cluett-Peabody	26,228	+ 9.0%	n.a.	n.a.
Indian Head	19,670	+46.2%	642	+ 5.6%
Reeves Bros.	17,208	-11.1%	81	-78.8%
Johnson & Johnson	79,781	+ 0.6%	n.a.	-15%(est.)
Dan River	37,300	-14.5%	n.a.	-32%(est.)

As for supplier companies and companies otherwise related to the textile industry, here's what their April announcements showed:

	Latest Quarter Sales ($1,000's)		Earnings ($1,000's)	
Company	1961	Year Ago	1961	Year Ago
Allied Chemical	$168,561	$184,161	$9,480	$13,520
American Enka	22,508	23,579	606	515
American Cyanamid	148,183	159,753	12,176	16,536
Rayonier	30,700	34,133	1,555	2,645
Industrial Rayon	10,047	12,997	325	(504)
Owens-Corning Fiberglas	48,034	51,189	2,091	4,012
Mill Factors	60,311	56,037	147	120
James Talcott	n.a.	n.a.	1,173	1,081
Celanese	62,000	66,700	— Per Share —	
			32¢	50¢

SPOT NEWS AT HOME. . . . . .

Amalgamated Clothing Workers of America, yielding to requests of President Kennedy and Labor Secretary Goldberg, has canceled its threatened May 1 boycott of woolen goods from Japan. Japanese have since announced plans for rigid control of exports of made-up wool suits for next three years. But ACW is still insisting on "a satisfactory agreement" with the Japanese.

Cannon Mills is postponing investment of millions of dollars in capital improvements because the Administration has failed to control textile imports.

J. P. Stevens & Co., Inc. has sent several of its officials to the Philadelphia Quartermaster's Depot to seek more information on the administration of the non-discrimination clause in government textile contracts. Officials of other southern companies, especially in South Carolina, where state law forbids mixing of races in textile mills, have expressed concern over the Administration's apparent resolve to enforce the clause strictly.

Assistant Secretary of Commerce Rowland Burstan says he favors an international agreement to regulate tariffs and quotas on textile imports.

U.S. Tariff Commission has voted 4-2 not to recommend a tariff boost on imports of rayon staple fiber. Majority said the big problems of American producers is over-capacity, not imports.

Representative Carl Vinson (D.-Ga.) has told the House that exeessive textile imports must be curtailed to halt serious harm to American manufacturers. He called for import quotas-- country by country and product by product.

SPOT NEWS FROM OVERSEAS. . . . . .

London-- Bentley Engineering Group, Ltd. will ship $2.5-million of hosiery knitting machinery to Russia. Delivery is to be completed June 1962. . . . British Trade Fair opening in Moscow May 19 will show largest display of cotton fabrics ever arranged overseas by the Cotton Board Color, Design & Style Center. . . . Board of Trade is now accepting applications for re-equipment and modernization under Phase 2 of Britain's plan for updating the cotton-finishing industry. Grants will cover 25% of cost. Phase 1 slashed cotton-weaving capacity 21%, yarn-processing capacity 26%.

Tokyo-- Teikoku Rayon, a Japanese firm, is now licensed to produce nylon by a method patented by Snia Viscosa. . . . Japan's 1961 export target for silk and man-made-fiber textiles is $354-million, 9% over 1960. Target for cotton goods is $126-million, 21% over 1960.

Rome-- Italy's textile industry is now moving fast. Output of silk industry in 1960 was 36.4% above 1953; cotton, 26.2%; woolens, 12.4%; cellulosic fibers, 188%. . . . Italian government is boosting help to silk industry with 10-yr. loans at 3% for new machinery. Loan fund totals $800,000.

WASHINGTON OUTLOOK . . . . .

Political factors-- both domestic and international-- weigh heavily in President Kennedy's decision on textile imports.

The textile situation is the first major trade problem that the new Administration has faced. Although the economic earmarks are distinctive, the political implications are likely to return time and again to haunt the President during his term of office.

Boiled down to its basic political simplicities, the textile question presents this quandary to the Administration:

*

On one hand, international relations demand consideration. Japan's friendly status might be at stake. Although textile quotas alone wouldn't shift Japan to an anti-U.S. position in world affairs, the Japanese have made clear that they would consider quota imposition almost a breach of good faith. They point out that they alone, of textile-producing nations, have voluntarily limited their input into the United States market.

These views reach the White House primarily through the State Department-- a department that traditionally urges the President to avoid action on imports that would endanger good relations with a friendly foreign power.

*

The other side of the political coin turns up primarily in Congress. From New England to the South-- and elsewhere-- textile-producing states have become something of a power in Congress. In the Senate, men such as Senator John O. Pastore (D.-R.I.) are important to the President. Pastore, for example, is a top-ranking member of the Senate Commerce Committee. In the house, Represenative Carl Vinson (D.-Ga.) is a giant in military affairs.

Kennedy will risk the wrath of Pastore, Vinson, and others if no effective action is taken against textile imports.

*

Middle-road approach satisfies almost no one, but avoids some inherent political dangers. This is the area from which most trade solutions come.

One disadvantage of such a solution is that the basic fight is not resolved. It remains a continuing problem.

But some Presidential advisers see three appealing offsets: (1.) time to work out a broad trade policy, rather than piecemeal action on textiles; (2.) the effect of an economic upturn here in the latter part of the year; and (3.) a leveling off of international business booms such as in Japan.

*

The White House continues to oppose labor boycotts against imported goods. For the second time in two months, Administration officials have succeeded in averting threatened labor actions against imports.

First, Secretary of Commerce Luther H. Hodges persuaded a Chicago local union of the International Brotherhood of Electrical Workers to postpone a scheduled May 1 boycott of imported electronic parts.

Then, after President Kennedy made a personal request through Secretary of Labor Arthur Goldberg to the Amalgamated Clothing Workers of America, Union President Jacob Potofsky agreed to call off his boycott-- also planned for May 1-- "in the national interest."

THE UNTOUCHABLES

(audio) **No one can touch Butterworth**

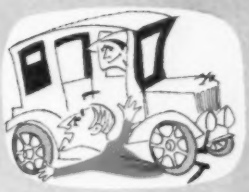
(audio) **when it comes to solving dilemmas**

(audio) **in synthetic fiber production.**

(audio) **Butterworth investigates the problem**

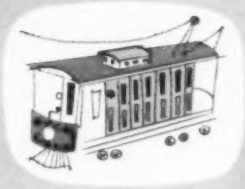
(audio) **and uses research and experimentation**

(audio) **...consults with chemists and dyehouses**

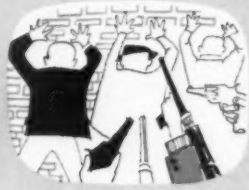


(audio) **and demonstration plants . . .**

(audio) **to improve traditional methods**

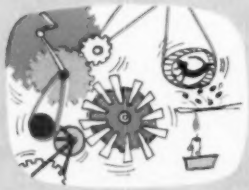


(audio) **or find new techniques**



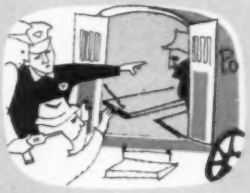
(audio) **that mean fast, low-cost**

(audio) **fiber production and finishing.**



(audio) **Then, Butterworth engineering and experience**

(audio) **starts building a machine or complete range**



(audio) **that eliminates the trouble.**

(audio) **If you're in a jam...**

(audio) **Buzz Butterworth! (Waverly 7-1020)**

BUTTERWORTH

. . . untouchable in synthetic fiber machinery

H. W. BUTTERWORTH & SONS COMPANY
Division of Van Norman Industries, Inc.
BETHAYRES, PA. • SINCE 1820

In the South: Industrial Heat Engineering Co., Greenville, S. C.
In the North: United States Supply Co., E. Providence, R. I.

Choosing a Silk Shantung—Photo by Ted Croner

Textiles have something to suit everybody's taste

. . . and commercial banks help make the selection possible

Even a village remnant shop can overwhelm you. Colors? All of the rainbow and a good many in between. Patterns? Scores that whisper, and dozens that shout. Fabrics? Anything from the homeliest calicos to the richest brocades to the most versatile synthetics.

Essentially it's competition for the people's choice that creates such abundance in cotton, wool, silk, metallic, glass and synthetic fiber fabrics. And here's how the nation's commercial banks help.

Loans from commercial banks help dealers buy up cotton and wool from farmers. Loans then help textile manufacturers lay in stocks of natural and synthetic fibers, and make them into whole cloth. In addition, loans help to warehouse and distribute fabrics, and ultimately help retailers stock and display a fabric to fit every need or whim.

The Chase Manhattan Bank, first in loans to business and industry, is proud to present this tribute to textiles, a competitive industry providing a variety of consumer goods which help all Americans exercise their basic right to pick and choose.

THE CHASE MANHATTAN BANK

CHARTERED IN 1799

1 Chase Manhattan Plaza, New York 15, New York

Member Federal Deposit Insurance Corporation

CIRCLE 23 ON READER SERVICE CARD

CARS GIVE UPHOLSTERY FABRICS THEIR TOUGHEST TEST

B.F.Goodrich

This upholstery fabric is back coated with Hycar acrylic latex supplied by B.F.Goodrich Chemical Company.

An automobile is just about the toughest proving ground you can find for an upholstery fabric. That's why the hidden advantages of a back coating of Hycar acrylic latex means so much in creating better, more durable fabrics. Hycar anchors the weave: it won't distort, won't ravel, no matter how many times the fabric is rubbed, stretched, or flexed. Seams can't slip either.

A Hycar back coating also gives the fabric lasting flexibility—and isn't affected by heavy doses of sunlight, heat or cold. Especially easy to use, this latex doesn't require compounding, is stable and colorless. The properties that make it washfast and unaffected by dry cleaning solvents are built right in.

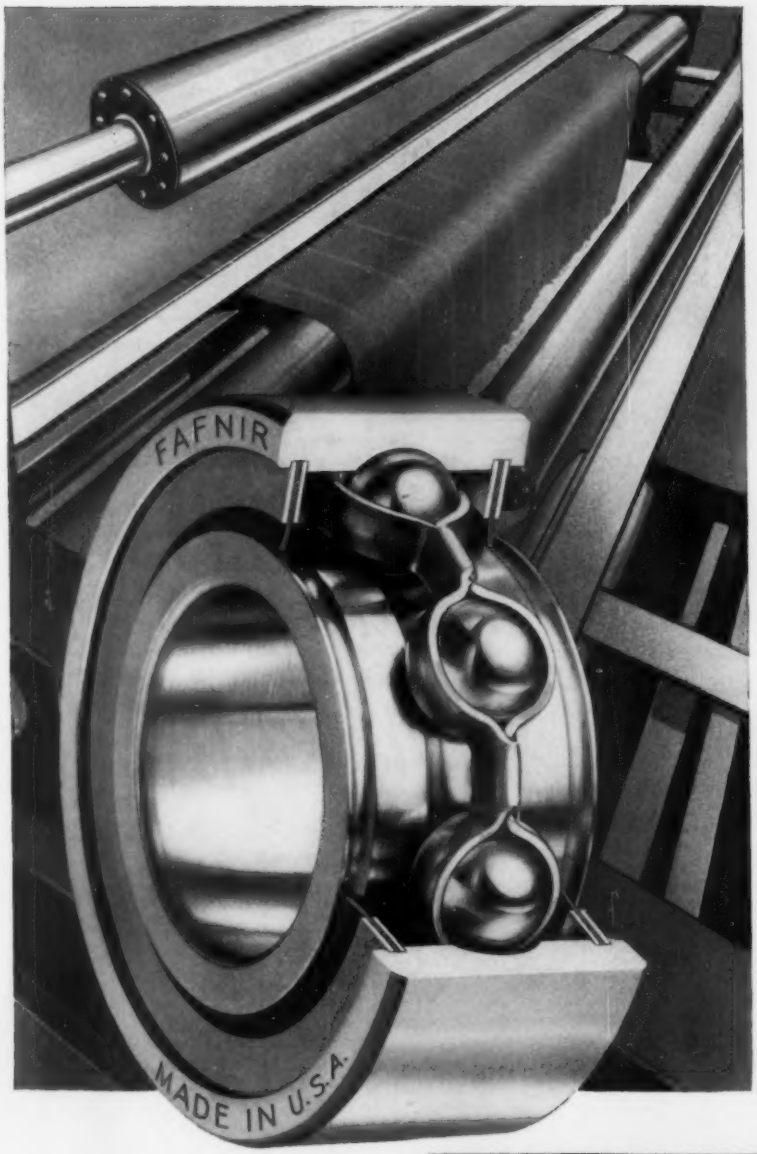
Here's another way Hycar helps improve a product, open new markets. For more facts, write Department PF-5, B.F.Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. In Canada: Kitchener, Ontario.

PRODUCTS FOR TEXTILE IMPROVEMENT

B.F.Goodrich Chemical

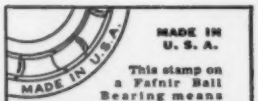
a division of The B.F.Goodrich Company

Look to **FAFNIR**



for stainless steel ball bearings that resist corrosion

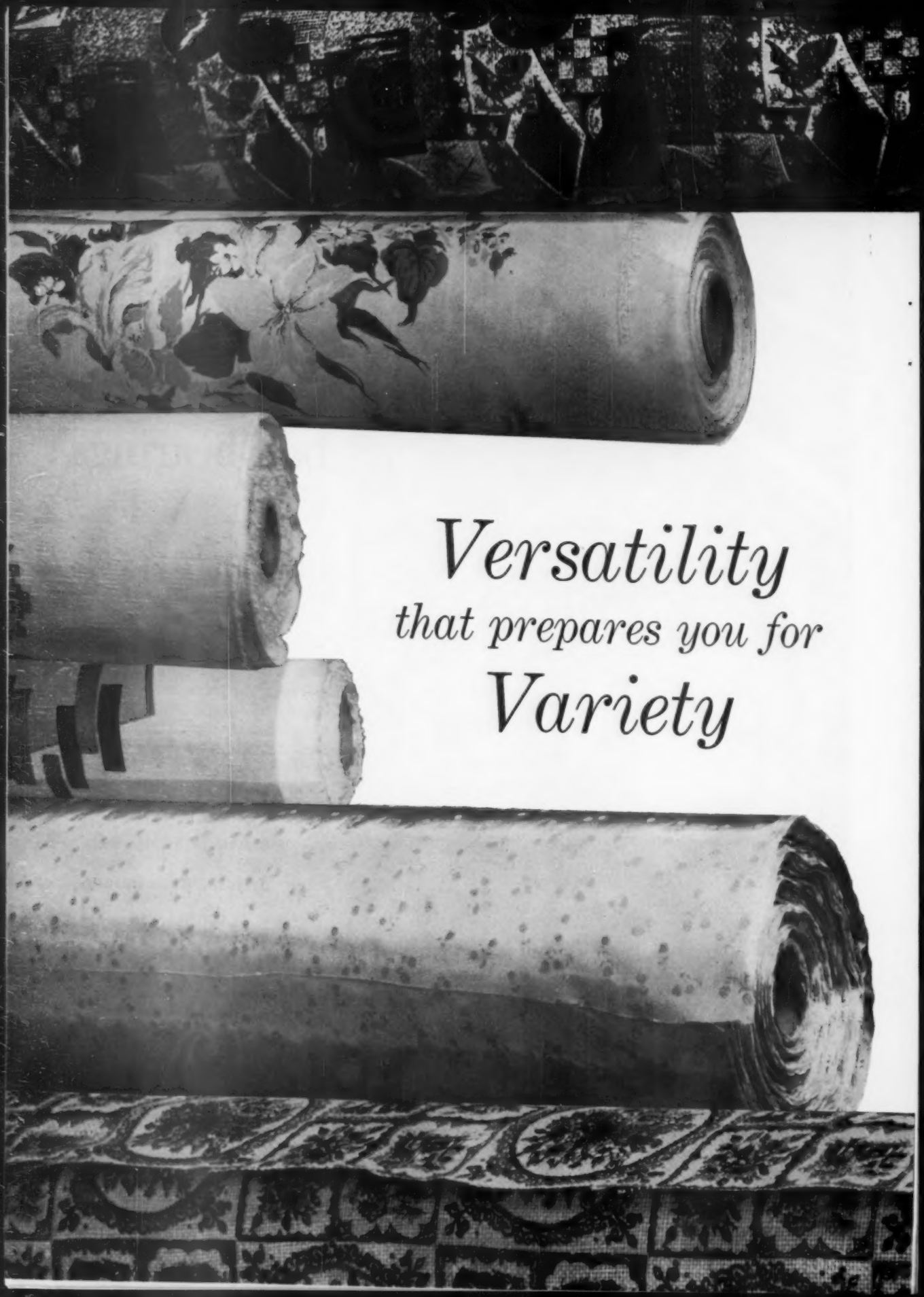
Textile finishing can "finish off" bearings . . . fast! To control the corrosive effects of moisture, fumes, dyes, and acids, Fafnir developed stainless steel ball bearings with seals designed for extremely severe service. These bearings are used today in a wide variety of textile wet processing equipment. Look to *Fafnir* for leadership in ball bearings. The Fafnir Bearing Company, New Britain, Connecticut.



MADE IN U. S. A.

This stamp on a Fafnir Ball Bearing means finest quality and workmanship . . . dependable supply . . . competent engineering help . . . and responsibility in meeting your bearing needs. It's worth bearing in mind.

FAFNIR
BALL BEARINGS


Versatility
that prepares you for
Variety

Some of the many modern mills that are meeting today's challenges with UNIFIL Loom Winders

ABNEY MILLS
AMEROTRON COMPANY
ARCO MILLS, INC.
BEAUNIT MILLS, INC.
BERKSHIRE HATHAWAY, INC.
BLANCHE COTTON MILLS
BOONTEX FABRICS CORP.
BURLINGTON INDUSTRIES, INC.
CANADIAN CELANESE, LTD.
CANNON MILLS COMPANY
CARTHAGE FABRICS CORP.
CONE MILLS CORP.
CONSOLIDATED TEXTILES, LTD.
DOVER MILL group
DRAYTON MILLS
EXPOSITION COTTON MILLS
GALLANT MFG. CO.
GLEN RAVEN SILK MILLS
GREENWOOD MILLS
JUDSON MILLS
KEYSTONE WEAVING MILLS
LAURENS MILLS
M. LOWENSTEIN & SONS, INC.
MACHIAS MILL
MARVEN LOOMS, INC.
PAXON FABRICS CORP.
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QUINCO FABRICS, INC.
RICHARD TEXTILES
RIVERSIDE MILLS, INC.
SCHWARZENBACH-HUBER CO.
WILLIAM SKINNER & SONS
STANDISH MILLS, INC.
STARR MILLS CORP.
J. P. STEVENS & CO., INC.
TALLASSEE MILLS
UNITED MERCHANTS & MANUFACTURERS, INC.
WAUMBEC MILLS, INC.
WOODSIDE MILLS

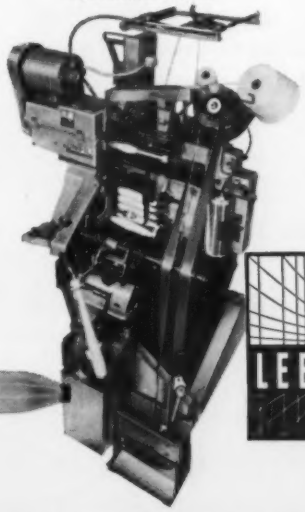
The rising discretionary income of Americans will continue to demand the new, the novel in fabrics. UNIFIL® is helping modern mills meet these ever changing patterns of taste.

UNIFIL Loom Winders are giving modern mills a market-oriented advantage — enabling weave rooms to use a wide variety of filling yarns; natural and man-made; spun, filament stretch and textured. Single shuttle looms can switch from one filling count to another, from one fabric to another as quickly as fashion trends change — and at no extra cost.

UNIFIL prepares a mill for market changes while drastically reducing inventory and production planning, work scheduling and employee training. UNIFIL can increase your earnings per loom in many ways.

UNIFIL's unmatched versatility meets today's urgent needs and tomorrow's markets. It allows mills to wind from any filling supply economically. Quills are wound and shuttles loaded, empty quills stripped and returned for rewinding — all automatically at the loom!

Investigate UNIFIL for greater versatility and economy. Learn the reasons why leading textile mills consistently reorder UNIFIL Loom Winders. Call your nearest Leesona Sales Engineer — in Boston, Philadelphia, Charlotte, Atlanta or Los Angeles. Or write LEESONA CORPORATION, P. O. Box 6088, Providence 4, R. I. Your markets won't wait — they'll change. Keeping pace with them is your opportunity.



Leesona leads to better fabrics

LEESONA

23.1.17

Only CONDOR V-Belts Offer ALL Performance Advantages 8 WAYS BETTER

1. Wide margin of strength
2. Minimum inelastic stretch
3. Uniform flexibility
4. Maximum resistance to structural breakdown
5. Smooth running
6. Maximum traction
7. High resistance to side-wear
8. Correct lateral reinforcement

Ask your R/M distributor for more information or write for BULLETIN M201.

More Grip...Less Slip Longer Service Life with CONDOR V-Belts

Smoothest Running V-Belts Made

Install Condor V-belts on your machine drives and get the advantages of the best engineered V-belt construction. R/M construction features provide the smoothest running V-belts made, balanced-built to insure maximum belt life under all drive load conditions.

- **TDH Strength Members**—*micro-positioned* in heat-dissipating rubber to pull a balanced share of the drive load . . . assure a smoother, *cooler* running drive
- **Straight Sidewalls**—put positive pressure on the sheavegrooves for *more* grip, *less* slip . . . minimize costly power waste and needless wear on the belt cover
- **Pre-Stretched**—during manufacture inelastic stretch is removed on the drive . . . eliminates belt matching problems

CONDOR ENDLESS BELTS—Condor Whipcord Belts outlast as many as 10 ordinary flat belts.
CONDOR DOUBLE V-BELTS for dry-can serpentine drives.

CONDOR V-BELTS FOR "*MORE USE PER DOLLAR*"

RM-133

RAYBESTOS-MANHATTAN, INC.
MANHATTAN RUBBER DIVISION • PASSAIC, N. J.
ENGINEERED RUBBER PRODUCTS

RS

EMIL ADOLFF

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We would ask you to write, if you are interested in further technical details.

U.S.A. CENTRAL ORGANIZATION
Textube Corporation, 995 Summer Str., Stamford, Conn.

SUB-AGENTS FOR THE SOUTH
Watson & Desmond, 220 West Fourth Street, P. O. Box 1954, Charlotte, N. C.

SUB-AGENTS FOR CANADA:
Crowther Limited, 212-214 Victoria Ave., Westmount, Montreal P.Q.

The Dayco X7 combines highest resistance to ozone checking and flexing with a unique skin-like surface feel, shown clearly in micro-photo inset. The result is super finger-tip control over roving for perfect drafting of every type of fibre — natural, manmade or blend. Available in all sizes for both short and long apron systems.

The Amazing New Dayco X7 Apron Solves Many Major Drafting Problems

Exclusive, new ingredients add longer life, improve drafting, cut downtime to new lows.

Here's news of a major break-through in apron performance . . . the Dayco X7, with a special new ingredient that greatly increases the durability and the drafting effectiveness of its outer surface.

The Dayco X7 is readily identified by the Dayco triangle and arrow, as well as by the superior performance it gives on every type of drafting frame. Outstanding among its features is the skin-like texture of its outer surface. This improved surface texture made possible by Dayco's exclusive ingredient and processing gives finger-tip control. The result is smoother, easier drafting of all types of fibres and blends.

How well does the Dayco X7 meet other apron requirements?

1. Dayco X7 offers highest resistance to ozone checking.
2. Dayco X7 reduces longitudinal cracking caused by flex (hysterectic loss in molecular strength) to a minimum.
3. Dayco X7 turns without slipping, the bottom apron properly driving the top one without excessive friction.
4. The Dayco X7 inside surface provides the lowest possible coefficient of friction and maximum resistance to abrasive wear.
5. Dayco X7 meets the demand of modern drafting . . . heavier weighting, higher speeds, and higher drafts—so common to newer frames.

The Dayco X7 gives top performance in every one of these respects, and in many others. It drafts all natural and man-made fibres and blends more smoothly and efficiently.

Five years of developmental work by Dayco engineers have made the Dayco X7 a truly superior apron. And more than a year's testing "on the firing line" has confirmed their reports. In tests involving many spindle hours of actual use under every conceivable operating condition, the Dayco X7 has come through with flying colors.

The Dayco X7 is made in all sizes for both short and long apron systems. It is backed by Dayco's high standards of quality and service. It reflects the same careful design and precision manufacture as Dayco standard aprons and other Dayco textile products with which you're already familiar.

Discover the excellence of this outstanding new apron for yourself. Let your Dayco representative help you arrange a trial of the Dayco X7 in your own operation.

Phone or write Dayco Textile Products Co., 401 South Carolina National Bank Bldg., Greenville, S. C. Overseas plant: The Dayton Rubber Co. Ltd., Dundee, Scotland.

Dayco TEXTILE PRODUCTS CO.

Division of Dayco Corporation

CIRCLE 31 ON READER SERVICE CARD

WHITIN HAS A WAY WITH TWISTERS

...in Novelty Yarns

KING SIZED packages mean KING SIZED savings!

King-sized packages made on a Whitin Pacemaker Twister carry up to four times as much Novelty Yarn as those on an average twister.

These giant packages — the result of combining the productive capacity of the Pacemaker Model P Twister with the flexibility of the Type C1 Novelty Yarn Attachment, make possible king-sized savings, too — savings such as: a major reduction in knots; sizeable reductions in doffing and maintenance time; and greater production per square foot of floor space.

The Pacemaker Model P is a competitive, high speed, skillfully-built Twister capable of producing, with little or no loss in operating speed, bobbins of 11" traverse and up to 5" in diameter, using 5½" diameter rings.

The famous Whitin Type C1 Novelty Yarn Attachment already has an established reputation for excellent performance based on its precision, its simplicity and its versatility.

FEATURES:

- Fewer knots
- Reduces doffing time
- Reduces maintenance time
- Greater production per square foot of floor space
- High-speed operation
- Duplex Splash Yarn and Rocker Motions — optional

In bringing together this unusual cost-cutting combination, Whitin effectively meets today's increasing need for large knotless packages in the heavy fabric field — for products such as domestic upholsteries, automobile fabrics, rug yarns and draperies.

See your nearest Whitin representative for details.

WHITIN MACHINE WORKS

WHITINSVILLE • MASSACHUSETTS

CHARLOTTE, N. C. GREENSBORO, N. C. ATLANTA, GA. SPARTANBURG, S. C. DEXTER, ME.

The best way to better yarns

Add TravelVac

to your Parks-Cramer long sleeve traveling blowers — and get rid of the lint!

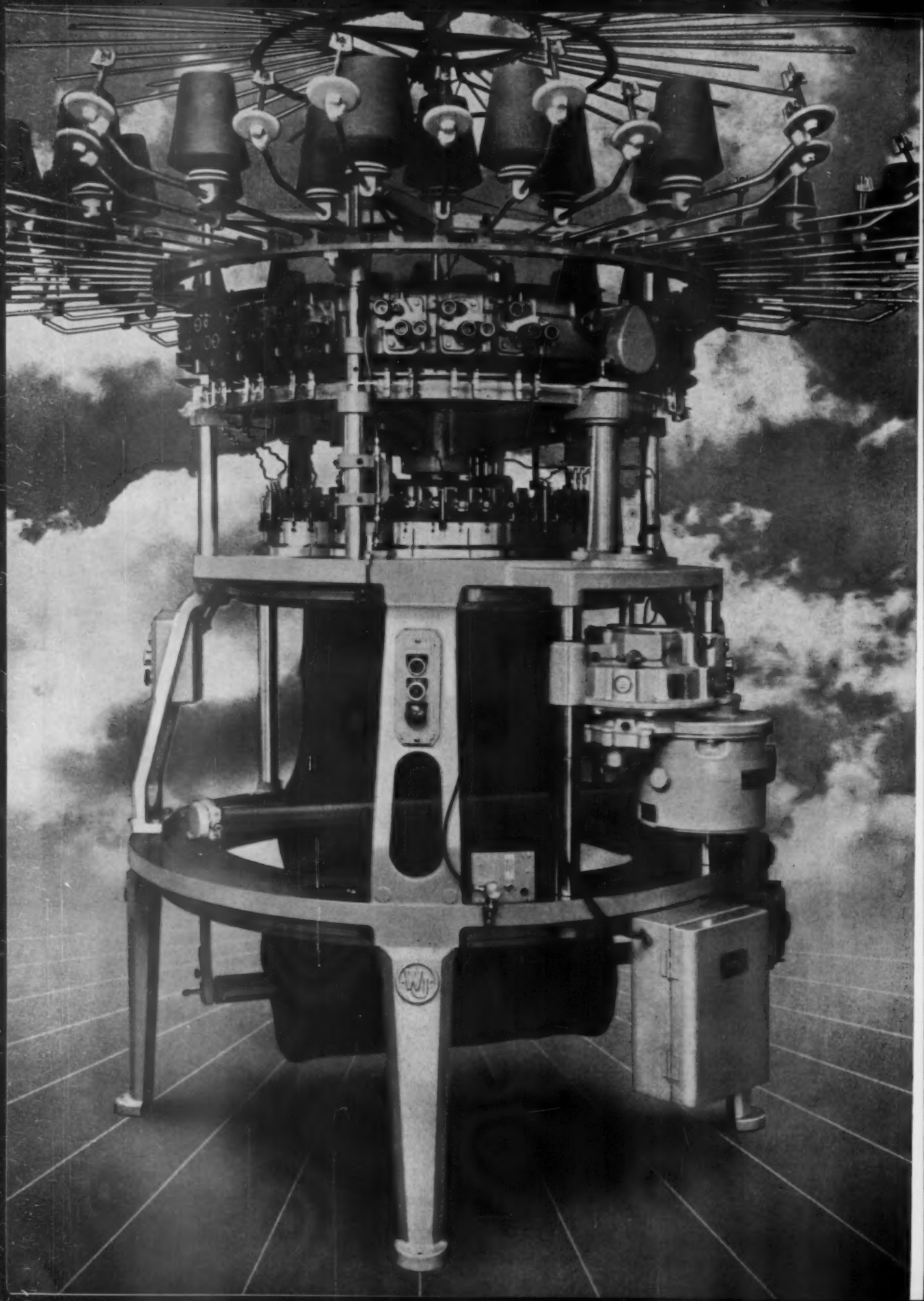
Lint automatically picked up and collected.

Manual floor sweeping largely eliminated.

TravelVac says No! to lint boil-ups, traveler loading, slubs.

Parks-Cramer Company

423 FITCHBURG, MASS. - CHARLOTTE, N.C. - ATLANTA, GA.



PRESENTING THE "CHALLENGER"

Added to Wildman Jacquard's fine family of knitting machines is the all new 30″ diameter, 44 feed **"Challenger".**

The **"Challenger"** is a high production yard goods circular knitting machine for the production of double pique fabrics. It's rugged, modern styled frame, together with a new heavy dial support stem, provides the rigidity so necessary for the high production of quality fabrics.

Rearrangement of the needles or dial sections (which are made interchangeable) enables the following fabrics to be produced: double pique, Swiss or French knit . . . single pique . . . eight lock . . . full rib . . . multi-color checks or block plaids . . . the various tuck effects . . . double jersey . . . French welt fabrics and stripes.

PBP-44
CHALLENGER

THE ALL NEW "CHALLENGER" A 30″ DIAMETER
. . . 44 FEED PLAIN YARD GOODS,
DOUBLE JERSEY CIRCULAR KNITTING MACHINE.

WILDMAN JACQUARD

WILDMAN JACQUARD CO. • 1210 STANBRIDGE ST. • NORRISTOWN, PENNA. • MANUFACTURERS OF HEMPHILL BANNER KNITTING MACHINES

A Subsidiary of Draper Corporation, Hopedale, Mass.

Manufacturers of the only circular knitting machines using a true Jacquard patterning mechanism

Front roll laps? Uneven yarn? Your Armstrong man can help minimize both

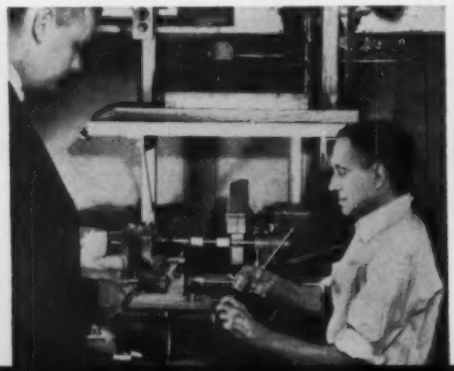
Each fiber and blend presents different spinning problems—problems that are not the same on every drafting system. That's why there is no universal combination of cots and aprons that will work equally well on every frame and fiber.

Because roll coverings and aprons are so important to yarn quality, they should be selected in the light of actual operating conditions. In this important selection job, your Armstrong man can make dependable suggestions. Whether your difficulty is yarn irregularity, excessive eyebrowing, or front-roll laps, he can suggest an Accotex material that will correct or minimize the trouble.

Your Armstrong man is a good source of ideas and help, and he has a real interest in how Accotex products work for you. Here, for example, you see W. A. Simmons working with personnel of Monroe Cotton Mills, Monroe, Georgia. Be sure to call *your* Armstrong man any time you have a roll covering or apron problem. Or write to Armstrong Cork Company, Industrial Division, 6505 Dauphin Street, Lancaster, Pa.

J. D. Peters, right, Overseer of Carding, and W. A. Simmons check performance of Accotex NC-762 antistatic cots on roving frame.

R. L. Brooks, right, discusses buffing problems with W. A. Simmons in the roll shop. An Armstrong Model "J" buffing machine is shown.



J. D. Peters and Armstrong representative Bill Simmons look over performance of drawing frame. Accotex materials are used on clearers.

Rodney Ratcliff, right, Spinning Room Overseer for the Monroe Cotton Mills, Monroe, Georgia, inspects yarn quality with Armstrong representative, W. A. Simmons. The frame has Accotex NO-728 front line cots, NC-729 back line cots, and Accotex NO-7075 aprons.

Armstrong ACCOTEX COTS AND APRONS

CIRCLE 37 ON READER SERVICE CARD

Another of the
invisible extras that
insure the precision performance
of LINK-BELT roller chain

Optical comparator inspection guarantees

precision of every part

Precision is *rigidly practiced* in every step of Link-Belt's roller chain production. The optical comparator is an example of the specialized equipment used to assure precise manufacturing control of chain parts and tools. It is capable of magnification up to 100 times.

Continuous inspection is just one of the *invisible extras* that contribute to the greater strength and endurance of Link-Belt roller chain. Others include precise heat-treat control, prestressing, pitch-hole preparation, shot-peening and burnishing of rollers.

Double- and triple-strand LINK-BELT steel roller chains easily handle the heavy loads encountered by this storage table drive.

These features—plus painstaking precision in every step of manufacture—assure you of chain that can easily cope with today's heavy loads and high drive speeds.

For engineering assistance in applying industry's preferred roller chain, contact your nearest Link-Belt office or authorized stock-carrying distributor. See CHAINS in the yellow pages of your phone directory.

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Warehouses, District Sales Offices and Stock Carrying Distributors in All Principal Cities. Export Office, New York 7; Australia, Marrickville (Sydney); Brazil, Sao Paulo; Canada, Scarboro (Toronto 13); South Africa, Springs; Switzerland, Geneva. Representatives Throughout the World. 15,597

LINK-BELT

ROLLER CHAINS AND SPROCKETS

TEXTILE WORLD . . . Editorial

Vol. 3, No. 5, May 1961

Your next modernization target:

That Old Industry Image

THIS IS a special issue of TEXTILE WORLD. It's about mill modernization today—modernization in big mills, small mills, and not-so-small mills—modernization in spinning, weaving, knitting, dyeing and finishing—in machines, buildings, and products—in money management, in the structure and function of organization, in new approaches to old, familiar problems.

This special issue is chock-full of ideas—industry's most vital, commodity—ideas for doing a better job, for improving profits, for making new products. The mill management man who doesn't find somewhere in this issue at least one idea he can gainfully put to work in his own plant is either (1) running a perfect mill—an unlikely state of affairs—or (2) not really interested in his job.

If we editors are proud of this modernization issue (and we really are), we are also proud to be part of an industry about which so much modernization can be reported. Even so, we venture to say that not enough outsiders know about the fresh thinking, the confidence, and the high level of capital investment that mark the progressive companies in this industry. We think more outsiders ought to know.

If so few outsiders know the best aspects of this industry, who's to blame? By and large, the blame falls on the textile industry itself. Today it thinks about itself the same way it was thinking about itself 15 years ago, 25 years ago, and longer. It hasn't modernized the image of itself. It's still prone to air its problems rather than its progress. Results? A distorted public image of the industry, a monumental public indifference to the industry's fate, dwindling stature in the capital market, and a flight of young engineering and management talent to other industries.

This leads us to suggest that modernization of textile-mill plant and equipment, though imperative, is not enough. This industry must also modernize the way it thinks about itself—bring its thinking into line with today's facts about this fast-changing industry.

Here's what we mean:

• **This is not a "mature" industry.** Yet we have recently watched audiences of textile men hold still, without a word of dissent or challenge, while some professed analyst made a speech about "this mature industry."

Silent acquiescence in this new is both wrong and fatal.

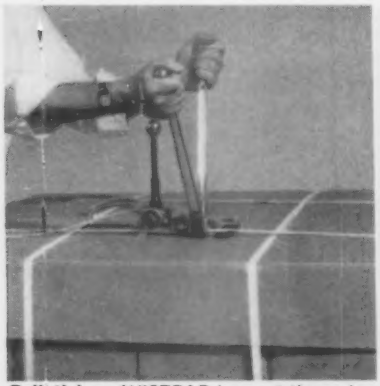
To see how *wrong* it is, look at the new ideas, the capital improvements, the continuous updating reported in every issue of this magazine. Or look back at your own mill 10 years ago, compare it with your mill today in terms of speeds, machines, controls and instruments, and labor-saving devices. Ten years ago did you have any idea you'd be in a mill like the one you're in today?

To see how *fatal* the "maturity" fallacy is, think of the mills that have shut down. We'll bet they're the ones, almost without exception, whose management men thought a little progress was enough progress, who thought inventiveness in this industry had run its course, who saw no new horizons stretching out ahead.

• **This industry is not doomed to die,** in spite of what a few industry members are saying publicly these days. Are we to believe that, in the absence of a challenge to these spokesmen, management men in this industry accept this gloomy prediction and look for an early demise? We can't believe they do. Not as long as this magazine can keep on reporting such bold, thoughtful, continuous modernization as is reported in this issue. Not as long as there are textile men who show the courage, judgment, and vision reflected in these pages.

The truth is, this industry is moving forward—and moving fast—in modernizing its plant and equipment. It must also move forward—with equal speed—in the way it thinks about itself and presents itself to the public.

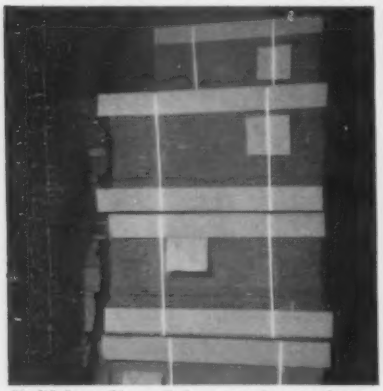
NEW IDEA AT WORK



Palletizing. AVISTRAP is used throughout industry to secure products ranging from die-castings to millwork, in palletized units weighing thousands of pounds.

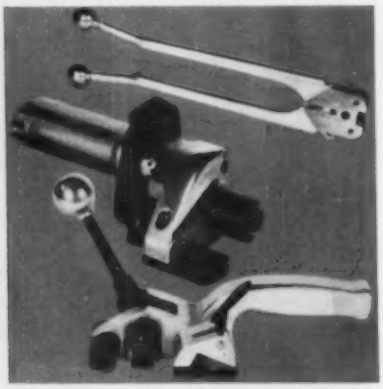
Reinforcing. Because it is flexible, tensions around corners with little crushing, AVISTRAP is ideal for reinforcing large cartons used in shipping bulky materials.

Banding. AVISTRAP is highly useful for banding because it is easy to apply, does not cut into the product and is easily removed and disposed of at destination.



Unitizing. Since it has no sharp edges, AVISTRAP has no tendency to damage merchandise such as these flat cartons. Flexibility helps make strapping easier.

Baling. Textile bale shown weighs approx. 700 lbs. AVISTRAP replaced metal in this application in over 100 mills because of ease of application and economy.



Tool Selection. A selection of AVISTRAP pneumatic and hand tools is carefully designed to fill needs of many different industrial strapping applications.

AVISTRAP® CORD STRAPPING

AVISTRAP®
CORD STRAPPING*

*Patents pending

Out-performs metal many ways. More energy is required to break AVISTRAP than equivalent-width metal strapping. AVISTRAP simply absorbs greater shock upon impact, keeps packages together long after metal strapping would have reached its breaking point. AVISTRAP will not lash out with jagged ends if broken, will not snag handlers' hands or other packages. For these reasons, in addition to light weight and easy handling, AVISTRAP is now used by the textile, paper, automotive, lumber, hardware, and many other industries. Request information or an in-plant demonstration of advantages AVISTRAP offers your industry by writing to Industrial Packaging Department, American Viscose Corporation.

AMERICAN VISCOSE CORPORATION, INDUSTRIAL PACKAGING DEPT., 1617 PENNSYLVANIA BLVD., PHILA. 3, PA.
District Offices: Atlanta, Ga. • Boston, Mass. • Charlotte, N. C. • Chicago, Ill. • Columbus, Ohio • Dallas, Tex. • Los Angeles, Calif. • New Orleans, La. • New York, N. Y.

TEXTILE WORLD

Management Bulletin

Things you should know about . . .

Engineering for Textiles

Massachusetts Institute of Technology will stage two special summer programs this year on engineering principles of textile materials. First session (June 19 to 23) will be "Elements of Textile Structural Mechanics." Second session (June 26 to 30) will cover "Advanced Mechanics of Textile Structures." Besides regular M.I.T. Textile Div. faculty members, visiting lecturers from N. C. State, Textile Research Institute, Fabric Research Laboratories, Chicopee, Du Pont, and Johnson & Johnson will participate. For more information write: Prof. J. M. Austin, Director of the Summer Session, Room 7-101, M.I.T., Cambridge 39, Mass.

Productivity

New study of productivity, "Barriers to Production," (Fred Rudge Associates, Inc.), comes up with this surprising conclusion based on interviews with 700 hourly workers, 210 supervisors: "Much of the passive resistance to increased productivity comes from the lower ranks of management." Other finds in the study: Most employees have an interest in boosting productivity, yet when top management speaks, even fairly highly placed managers miss a part of the message. For instance, 67% of vice presidents, 56% of supervisors, 40% of plant managers, 30% of foremen, and only 20% of hourly workers understood what top management was talking about when it issued a special productivity statement.

Women Office Workers

National Office Management Association reports these answers turned up in a survey of 1,900 companies in the United States and Canada: Sixty-six percent of companies polled have no double standard of pay; 68% treat men and women the same in discipline. But 80% report women are absent more than men and 65% say they have qualms about putting a woman supervisor over a department employing male workers.

Industrial Security

President John L. Buckley of the American Society for Industrial Security says: "A 1% loss in gross annual sales through theft or pilferage means a 6% loss in net profits. Some experts estimate this 'shrinkage' [through pilferage] may be as high as 3 to 5%." He urges pre-employment screening of applicants, which is "paying important dividends . . . by eliminating the trouble at its source . . ."

Well-Rounded Supervision

New book, called "Handbook for Supervisors," tells a supervisor everything he ought to know about how to handle a union, why men work, how to maintain job interest, how to learn, how to teach, and how to handle grievances. (Prentice-Hall, Englewood Cliffs, N. J. $4.65.)

NEW WAREHOUSE serves all West Point mills with more uniform cotton.

WOOL CARDS at Newman produce sales yarn for tufting. Raw-stock dyeing has also been added.

METALLIC CARD clothing costing more than $700,000 has been installed in company's mills during 1960.

'61 modernization

All-Out Modernization:

How One Company Makes Good

The photos and charts you see on these pages (and the pages that follow) give you a glimpse of a company where modernization is a state of mind and a way of thinking, planning, organizing, and acting. Here you'll see how West Point Mfg. Co. plans for the future today.

MANAGEMENT MEN at West Point Mfg. Co. (West Point, Ga.) like to think of modernization in down-to-earth terms. To them, continuous, planned modernization means bringing machinery, plant, and processes up to the highest possible standard (photos and charts, above and following pages).

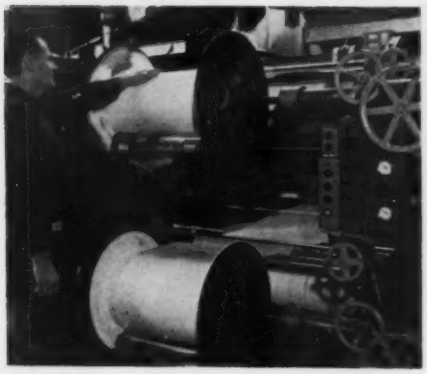
If West Point's definition of modernization sounds a bit modest, its solid record of achievement in modernization is anything but modest. The payoff from West Point's own style of planned modernization is six-fold:

*Higher net worth
*More working capital
*Newer, better plant
*More jobs for more people
*Better earnings
*Greater growth from versatile, diversified plant and equipment.

To be a bit more specific, look at the impressive gains scored by the company during fiscal 1960:

Capital expenditures were the highest ever—$11.3 million.

Adapted from "The President's Report to Employees," published by "The Westpointer," West Point Mfg. Co., West Point, Ga.



NEW SLASHER at Dixie is only one of new machines installed.

OLD FRAMES were moved right out the hole in side of Shawmut Mill during modernization. Now Shawmut is completely up to date.

WEAVE ROOM at Shawmut boasts 428 new looms of the latest type. Floors, too, were modernized. Today, they sparkle.

Ideas Come Alive

Company employment increased 305. (During the year, employees earned more than $4 million over their 1959 earnings.)

Profits were 35% above 1959, which was a good year itself.

Sales were the highest in the 80-year history of West Point.

West Point's consolidated net sales for 1960 were $156,921,000. This sales peak is an 8% increase over sales for the 1959 year, which were $145,619,000.

Consolidated net profit for the fiscal year after all charges and provision for income taxes was $8,173,-000. This is an increase of 35% over the prior year. (Net profit for 1959 was $6,032,000.)

Sales of goods composed mainly of man-made-fiber materials were $40,503,000 for the year. This amount represents 26% of total consolidated sales, compared to 25% of the sales for the prior year. Sales of such goods have risen from 21% of total sales to 26% during the past five years.

Government sales, both direct and indirect, amounted to $2,021,-000, a slight drop from 1959.

SPENDING—HIGH

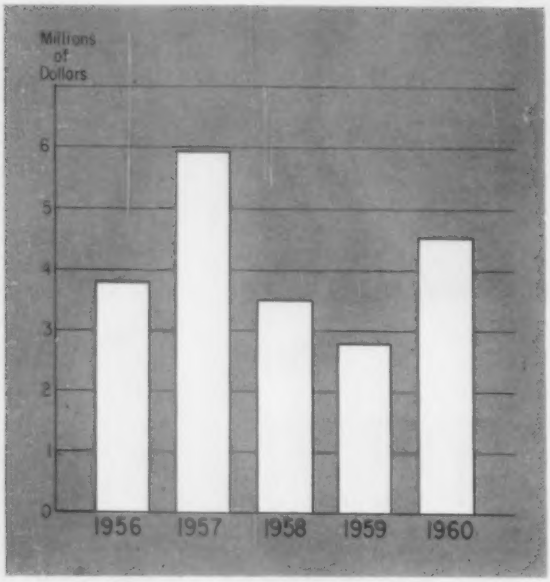
"Continuing the long-time company policy of keeping abreast of machinery improvements, and because of expansion in our productive facilities, West Point appropriated during the fiscal year 1960 more money than ever before for capital expenditures," says company President Joseph L. Lanier.

"We began the fiscal year with capital-expenditure commitments of $2,840,000," Lanier adds. These commitments were increased during the year by an additional $8,492,-000, making a total of $11,332,000 for the year. Actual expenditures for the year amounted to $4,532,-000, leaving unexpended commitments of $6,800,000 at the end of the year.

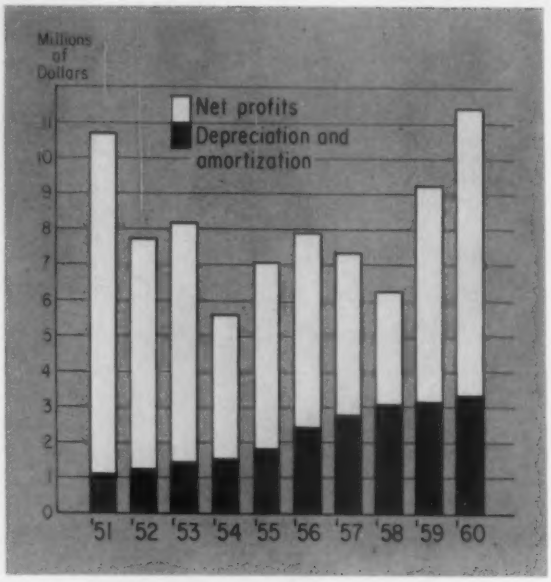
"Another area of growth was in the number of employees: from 11,319 to 11,624, an increase of 305 employees. Our operations during the year averaged 5½ days per week.

"It is significant that during the year West Point employees received more money as wages and salaries

How West Point Looks at 8 Results of



1. CAPITAL EXPENDITURE



2. PROFITS AND PLOWBACKS

ALL-OUT MODERNIZATION . . . *Begins on page* 42

than ever before. The total amount was $43,384,000, an increase of more than $4-million over the year before. It's of particular interest that total wages and salaries for 1960 exceeded by $10-million the total sales volume of the West Point company in 1941—only 19 years ago," the president adds.

MODERNIZING TO SURVIVE

West Point's prime purpose in buying new machinery is to improve its production per manhour and lower its manufacturing costs. And sometimes the purpose is solely to improve quality. West Point is firmly convinced it must do these things if it is to survive as a business.

Because it is always important to maintain high quality and efficient operations, West Point is alert to all mechanical improvements. It continuously seeks to replace worn-out or obsolete equipment with the newest models.

This business philosophy has not only enabled West Point to keep pace with its competitors—but has helped it stay ahead.

Included in the recent capital-expenditure appropriations was approximately $2,400,000 for the new unit at Shawmut Mill for the production of fine combed-yarn fabrics. This mill has 428 new looms and 20,000 new spinning spindles.

Another outlay of about $1,175,000 was involved in the acquisition of Newnan Mill Div.'s land and buildings and the addition of machinery for raw-stock dyeing and other improvements.

Another investment of $600,000 was made in the new central cotton warehouse and adjacent office building.

The growth of West Point's towel business resulted in converting Dixie Mill Div. from spun man-made-fiber fabrics to towels. This over-all cost is $1,650,000, and will make Dixie a fully modern terry-towel mill of 21,000 spinning spindles and 499 looms.

Construction projects underway during 1961 also include a new two-story addition at Wellington Mill, and a new one-story addition to the Springdale carpeting plant of Cabin Crafts, Inc., Dalton.

Capital expenditures for modernization, replacement, and expansion during 1960 were the second highest in the past five years. The company expects to hit a new high in 1961.

Capital expenditures for an endless variety of items of different types and sizes also ran high in 1960. For instance, Lanett Mill installed a new cloth folder, Fairfax Mill, a new tabbing machine, Research Div., a new electronic classifier, and Columbus Mill, a new spinning-frame oiling system.

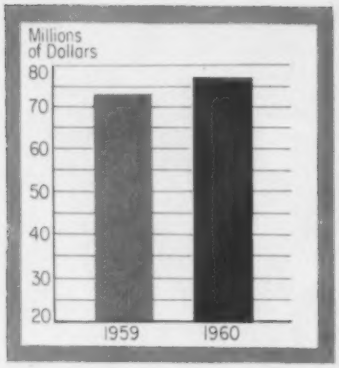
These items are just a few of those in West Point's expenditures of $4,532,000 for equipment, buildings, and land.

MEASURING GROWTH

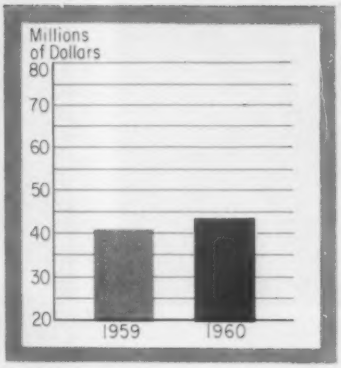
West Point's general modernization program—the Shawmut Mill expansion, the Newnan Mill acquisition, the new central cotton warehouse, the changeover and modernization of Dixie Mill—represents significant improvements and growth of operations.

These developments add strength to the company because they indicate progress on three definite fronts: (1) diversification and growth in products, (2) improved practices in selecting and handling baled cotton, and (3) machine modernization, as well.

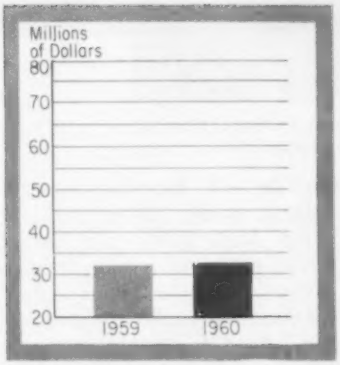
All-Out Modernization



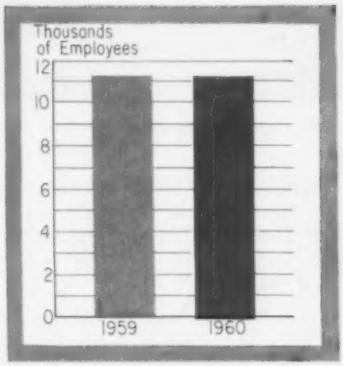
3. NET WORTH



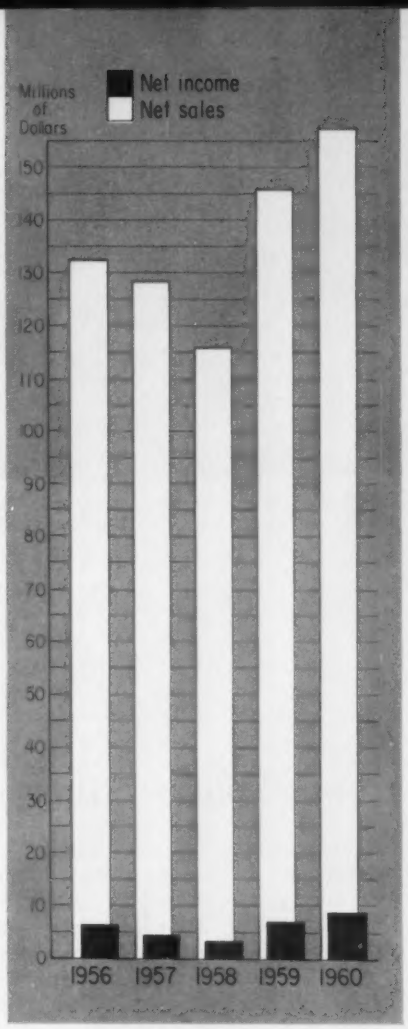
4. WORKING CAPITAL



5. NEW PLANT



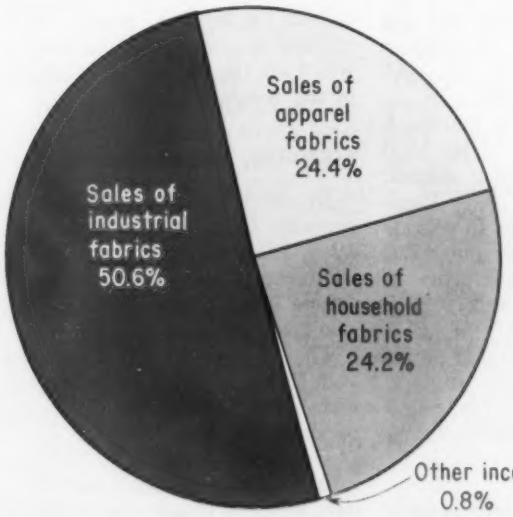
6. EMPLOYMENT

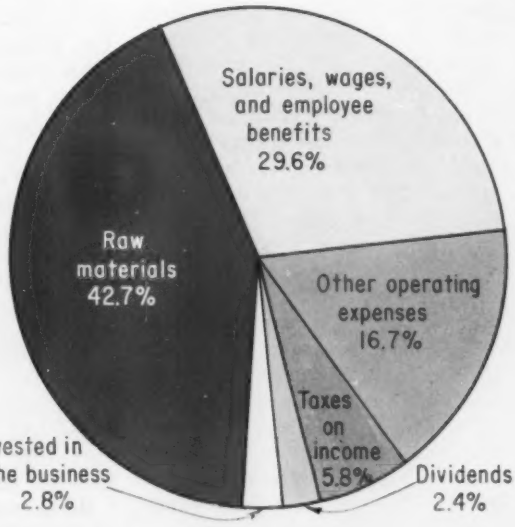


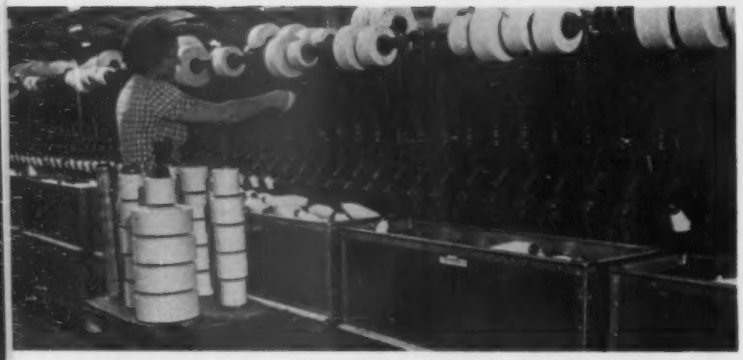
7. SALES AND INCOME

8. RECEIPTS AND EXPENDITURE

(Where the money came from . . . and where it went)




Salaries, wages, and employee benefits 29.6%
Raw materials 42.7%
Other operating expenses 16.7%
Taxes on income 5.8%
Dividends 2.4%
Reinvested in the business 2.8%



DOFF BOXES (brand new, too) at spoolers in Columbus Mill have replaced yarn-storage bins. The 230 boxes have improved handling.

PUSHBUTTON LOOMS at Fairfax cost well over $1.5-million. This installation of 150 looms boosts towel production.

ALL-OUT MODERNIZATION . . . *Begins on page* 42

Other indications of growth and strength include an expansion of West Point's sales organization and a favorable report from its foreign affiliates. The balance sheet shows $1,360,704 invested in its foreign affiliates. A new investment of '59, Rossifloor S.p.H. in Italy, is now well under way in producing tufted products.

BUILDING WITH PROFITS

Profits spark the creative drive at West Point that results in building of a bigger and better company. But that doesn't mean the profits come easily. Far from it. As President Lanier points out, "Even at best, profits are modest. In recent years profits have been low in the textile industry. While our profits for the fiscal year 1960 were the highest in total dollars for the past nine years, they represent only 5.2% of our total sales volume."

Lanier goes on to say: "This profit increase of 35% in 1960 was due, in part, to moderate price increases that began in 1959 and extended generally into the 1960 fiscal year.

"It is thus gratifying and encouraging that our company has experienced favorable increases in profits both for 1959 and 1960 fiscal years.

"The picture in 1961 is not clear. But we are confident that with our product diversification, quality, and market coverage, we will get our share of available business. Also, we are encouraged because the textile industry is getting in better balance as to supply and demand."

One good reason the profit picture has brightened is opening of the new Shawmut Mill fine-goods operation, which swung into full production in March. New Equipment will be installed for Dixie Mill Div. by June.

Operations are under way at the new central cotton warehouse and the adjacent Cotton Department office building near Fairfax. All cotton used by West Point is received here, where it is examined, classed, and weighed under ideal conditions and scientific control. "This central facility," says President Lanier, "enables us to provide more uniform cotton to our mills, with resulting improvement in processing efficiency and in the quality of our products."

The company's increase in profits comes from three major sources: (1) increased business, (2) increased prices, and (3) lower manufacturing costs—like these made possible by Shawmut Mill.

Because some of the costs in business do not fluctuate, increased business usually brings increased profits. More goods can be sold without enlarging certain expenses. Likewise, when the volume of goods sold decreases, profits go down at an even faster rate because these same costs do not decrease with the lesser volume.

Of course, West Point is trying to sell as many goods as possible at adequate and fair prices. Thus its opportunities for increased profits lie in the area of lower costs. In this area, past profits—as well as current profits—are important because they provide the means to invest in more efficient machines, and techniques, which are the ultimate determinants of the company's health.

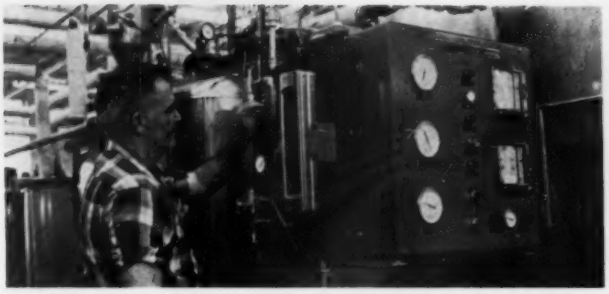
MEETING OBLIGATIONS

In addition to the $156,921,000 received from sales of goods in 1960, $322,000 came from commissions earned as selling agents for certain other goods produced outside the company.

The pie chart (p. 45) shows how each dollar of West Point revenue was spent during the 12-month period ending Aug. 27, 1960.

The largest amount (42.7%) was spent for cotton and other raw materials, which is to say, almost half of

HYDRAULIC PRESS for baling cloth in Lanett Mill cloth department meets demand for wider fabrics.



SLASHER ROOM controls and indicators at Langdale Mill save materials and improve sized warps.

every dollar went for raw materials. Items purchased include raw cotton, yarns, flax, and a great variety of man-made fibers such as viscose, Kodel, nylon, Dynel, Fortrel, Dacron, Acrilan and Verel. During 1960 more than 261,000 bales of cotton and more than 19-million pounds of other fibers were used.

The next largest expenditure (29.6% of sales income) went to employees as wages, salaries, and benefits. Among the benefits are the company's share of social-security taxes, group life and casualty insurance, compensation insurance, vacation pay, Christmas bonuses, and other miscellaneous expenses.

The company's total payroll in 1960 was the highest in its history—more than $43-million. This figure is 11% higher than in 1950.

Other demands on income: depreciation and amortization; supplies, repairs, and maintenance; and other operating expenses—add up to 16.7%.

Depreciation and amortization took 2.1%, while cost of supplies, repairs, and maintenance took 5% of income.

Other operating expenses in this group accounted for 9.6% of revenues. This category covers costs of finishing, dyes and chemicals, electrical power, shipping, taxes (other than income taxes), telephone and telegraph charges, selling expenses, and advertising and sales promotion.

Another 5.8% went to federal and state governments for taxes on income. This figure totaled more than $9-million, which represents almost 6¢ of each sales dollar.

When added together, these categories total 94.8%. The remaining 5.2% is net income—the company's profit on each dollar of revenue. Net income is further divided two ways: (1) 2.8% reinvested in the business; and (2) 2.4% paid to stockholders as dividends.

A record number of shares of stock was represented at the 80th annual meeting of stockholders last November. Of the 3,037,246 shares of stock, more than 85% were represented in person or by proxy.

Who are the stockholders? Many of them are company employees. Others are from 48 states and several foreign countries. At the end of the past fiscal year, there was slightly more than one stockholder

NEW SPINDLES at Shawmut overhang newly refurbished flooring. Improved lighting bathes whole area in 65 footcandles of light.

SPARKLING LABORATORY at Lantuck Division aids in nonwoven development. New equipment has been added in West Point's modernization program.

TRAVELING CLEANERS for spinning frames in Langdale Mill represent second phase of modernization program at the mill.

ALL-OUT MODERNIZATION . . . *Begins on page* 42

for each employee—11,650 stockholders and 11,624 employees.

Dividends paid to West Point stockholders during the fiscal year 1960 totaled $3,797,000, or $1.25 per share. Dividends in 1959 were $0.95 per share.

As West Point has grown, additional stockholders have been needed for additional capital. And West Point's history of earnings has been successful in attracting these stockholders.

MEETING COMPETITION

West Point has competition—plenty of it. But the company appreciates that competition is a necessary and wholesome part of our American way of life and that we are traditionally a competitive people. Further, it cherishes the freedom to enjoy competitive business conditions.

But because competition exists, West Point and its employees are constantly cooperating in producing high-quality goods and accepting changes and improvements in processes and machines. It does these things to be competitive.

Competition hits West Point from all sides. First there are the companies that produce the same kinds of goods. Then there are other companies that make products entirely different, which are nevertheless adaptable for the same general end-use fabrics. Also, a continuous threat to West Point and to the textile industry in general are imports from low-wage countries.

West Point is meeting all competition well—to date, it is meeting and beating it. West Point has continued to expand until today it is among the 10 largest textile corporations in the nation. In 1959, for instance, it ranked ninth in total sales, seventh in profits.

West Point's management works on this assumption: In today's highly competitive markets, prices can be controlled only if costs are kept firmly under control. That's why cost increases, including wage and salary boosts, must be matched by comparable gains in productivity.

NEW-WAY DISTRIBUTION

In 1960, West Point reaped dividends from a major change in its merchandising approach. Under this new set up, the merchandising departments at Wellington Sears (a subsidiary selling agent) operate on a market or end-use basis instead of a product basis.

New products in the fields of fine dress goods, nonwovens, and man-made-fiber industrial fabrics are promising.

Asquisition during 1960 of the selling agency and fabric converter, William L. Barrell Co., has further strengthened production and distribution of duck fabrics and other goods.

West Point's advertising program for 1961 is the most extensive yet, and it will continue to play a very important role in the over-all marketing program. West Point goods are advertised in many of the important consumer, business, and technical publications.

Partially because of sound and effective advertising in consumer magazines, many West Point product names have become household words. Industrial fabrics are advertised in business and technical magazines to such industries as rubber, plastics, canvas goods, chemical processing, trucking, and boating.

One Company, Three States, 14 Mills

WEST POINT DIVISIONS are in three states: Alabama, Georgia, and South Carolina.

Alabama mills: Lanett, Lanett Bleachery & Dye Works, Fairfax, Shawmut, Riverdale, West Point Utilization Co., Langdale, and Lantuck (nonwoven) Div.

Georgia mills: Dixie, Columbus, and Newnan. Cabin Crafts, Inc., is a subsidiary.

South Carolina mills: Equinox and Wellington.

modernization '61

Companies looking for working capital, tax gains, or freedom from bank loan restrictions are turning to leasing today. While leasing isn't a cure-all, there might be something in it for you.

Modernize Through Leasing

"PROFIT COMES from operating a mill, not owning it," says a textile manager who recently leased 40 new high-speed, twin-feed seamless hosiery knitting machines. The new equipment has put him back in the black—even though he pays a monthly rental for the latest, high-production equipment.

Leasing has enabled this medium-sized hosiery maker to re-equip his mill without depleting his already meager working capital, or seeking new equity that would have diluted his ownership. His old equipment was obsolete. It produced now-out-of-favor full-fashioned hosiery at higher cost than either foreign or domestic competitors.

"We were making a good product that was out of style. Anybody in full-fashioned hosiery had to get into seamless, or he was sunk. And they have been dropping like flies," he adds.

In addition to curing the two textile industry headaches of competition and obsolescence, this operator found that leasing has these advantages for the mill owner:

- **Frees working capital** for seasonal raw material demands.
- **Preserves equity** and control of present stockholders — particularly important in family-held textile companies.
- **Avoids bank restrictions** on dividends, required ratios, and freedom of management action.
- **Leaves open other lines of credit**—such as banks and factoring of receivables.
- **Makes credit quickly available** to smaller firms with a minimum of negotiation and restrictions.
- **Brings amortization of equipment more into line** with real obsolescence factors — instead of distorted IRS Schedule F, which requires a longer useful economic life than new textile equipment has.
- **Postpones taxes** on earnings from new machines.

Leasing isn't for everyone, but you should at least explore the possibilities—the gains and risks.

By WILLIAM R. LEITCH
Senior Editor, Purchasing Week
(A McGraw-Hill Publication)
New York City

BOOM IN LEASING

Instead of making do with ancient machines as they have for so many years, more and more textile men are using leasing for financing equipment. The industry now has between $10- and $15-million worth of production equipment on lease—up 150% from 1959. In addition, textile firms lease office equipment, conveyors, fork trucks—almost anything—for a total of about $30-million. Leasing firms such as Boothe Leasing, U. S. Leasing, National Equipment Rental, Walter Heller's Nationwide Leasing, Talcott, and others sense there is a lot more new equipment that can be moved into plants via leasing.

The textile industry looks like a fertile market for leasing service: It is capital starved. The typical firm (300 employees and between $2- and $10-million net worth) has low cash and credit reserves and may be using some out-of-date equipment. But, just as the competition from foreign textiles has reached a new height, new textile machines and processing units have begun to come on the market in ever-increasing numbers to do many different jobs.

Suddenly, the textile industry has realized that it has a plant made obsolete by competition, swift style changes, and product innovation. But there's little cash in the till to pay for the new equipment it so desperately needs.

Obsolescence, heretofore not a factor in an industry where looms have had a 50-year life, now hurts another way, says D. P. Boothe, Jr., president of Boothe Leasing Co. "Textiles have low depreciation reserves because the original machinery was low cost to begin with, and depreciation can't build replacement funds to a level needed to purchase new, more complex, and costly machines. New equipment will give you twice the production of the old, but at four times the investment cost of the old machines. It's caused by inflation as well as the complexity of new equipment."

SLOW TO LEASE

If leasing is so good, why haven't textile men done more of it sooner? For one thing, the pressure of obsolescence and competition, plus available new equipment, is a relatively recent development. Then, too, "Textile managers are so darned conservative," says one leasing expert. "Any new idea, particularly in the financial field, is looked on as something like sin."

One reason large firms have done little leasing is undoubtedly the cost —4 to 6 percentage points higher than the prime rate.

A top financial manager at one of the largest textile producers said, "It costs too much. As an AAA firm, we can get money as cheap as

the leasing companies." This man added that many leases spread over hundreds of individual items of equipment in his plants would cause a lot of additional paperwork. Leasing is best for plants and equipment on a blanket basis, he noted.

Another influence that affects leasing volume is the large market in used machinery. It's often possible to pick up, at low cost, used equipment that can do the job.

WHAT IS A LEASE?

Newcomers to leasing often assume that it's the same as equipment rental, a common practice in garment-making and other sectors of the textile industry. A true lease has a longer term than a rental contract, and is much more complex an arrangement than simple rental. Typical contracts go for 3, 5, 7, and 10 years, though smaller items of equipment, such as office machines, material-handling equipment, and maintenance-shop equipment may be had on shorter terms.

Longer terms are indicated for production equipment and other permanent installations, such as conveyors. Installations may be complicated and "permanent," but that doesn't mean that the equipment plus installation cost can't be leased. One of the largest carpet mills is almost 100% leased, including equipment that could not be removed. Also leases usually cover new items of equipment, rather than used equipment such as sewing machines, which are reclaimed and rerented at the end of the lease. There are two ways to lease: either through a leasing company, or through an equipment manufacturer who has a lease plan. The few textile machine makers that have lease plans (Whitin Machine Co., Textile Machine Works, and International Textile Machine Co., to mention only three) usually turn their leases over to a professional lessor. But in industries where leasing is better established—say, material-handling equipment—companies such as Clark Equipment Corp. handle their own leases through subsidiaries.

More typically the textile firm first decides on the equipment it needs, then contacts a leasing specialist, who buys the required equipment from the manufacturer and then executes a lease with the textile firm. The lessee presents financial statements and goes through much the same sort of credit examination on a big lease as it would with a bank or insurance company. But on small leases the financial examination is often cursory.

The lease may cover anything from a $150 copying machine to everything in a plant. All this may be covered by a blanket lease. It also may include the cost of installation for special equipment. The leasing company either writes the purchase orders for the necessary work or endorses your company's.

Most leases are "net" leases. That is, they do not include any maintenance of the equipment, even though the leasing company owns it. Truck, auto fleet, and data-processing equipment leases continue to be "maintenance" leases, however.

Sale-and-lease-back is a technique becoming popular in textiles today. The method formerly was used only for large transactions, where a textile firm sold land, buildings, and equipment to a lessor, then leased them back.

This method now applies also to looms that need rebuilding, says one expert. He reports several companies that had worn-out looms that could be rebuilt, "but the mill would have had to borrow $100,000 to do the job." They sold the looms to National who in turn had them rebuilt and leased them back to the weaver.

Leasing firms buy the equipment. They, in turn, lease it with money got from loans, investors, or rediscounting the lease (much as an auto-time-payment contract is rediscounted). They pay at least the prime rate for their funds, so lessees can expect to pay from 9 to 16% on a lease. Typical leases in the textile industry run from 10% to 14%. Average is about 12%. But there is no set "rate" in leasing. It is up to you to strike as good a bargain as you can.

WHAT YOUR LEASE SHOULD CONTAIN

Lease contracts may seem disarmingly simple for the amount of money they entail. But their flexibility is an advantage because lease contracts can be easily tailored to the lessee's situation.

One provision that has caused controversy is the "purchase option." Leasing companies formerly offered very low purchase options at the end of a lease. The Internal Revenue Service has ruled that these options make the lease a conditional sales contract, with the result that lease payments are not considered deductions as business expense. Prospective lessees should shy away from purchase operations.

Renewal options are acceptable provided the renewal term is less than the useful life of the equipment. This new IRS ruling knocks out two old leasing claims: that it is a method of "expensing" everything, and that renewals could be for a long term at a low rate—say $1 per year.

Besides the rate, lessees can negotiate on the amount they pay per year. Depending on your cash situation, the depreciation policy you follow on your other equipment, and the profitability of the equipment, you can arrange the lease amounts to cover anywhere from 10% of purchase price to 40% of the purchase price in a year. This way you can match lease payments to comparable depreciation charges, make the lease payments high in the first years when profitability would be high, or follow a scheme to meet budget needs. Leasing companies will allow you to work out almost any payment scheme that seems reasonable.

MAKING PREPAYMENT

Most leases require a prepayment of from 3 to 5 months' rent. This is the "security" for the leasing company, but this is by no means any standard on this practice, either. Your deposit decreases your working capital, and the prepayment does not apply until the final months of the lease.

DECISION: LEASE OR BUY

There are two approaches to lease-or-buy analysis. One looks at the equipment up for lease and sees if the additional income from the equipment covers its operating cost and lease payment plus profit. The other method requires a cash budget and tries to estimate the effect of leasing of working capital for the company as a whole. A good analysis should include both points of view.

"It's hard to figure the leasing plus," comments Jack Snyder of Talcott Leasing. "The analysis is involved and difficult to work out. It's different in each case." Snyder recommends that prospective lessees look at both "the cost of money, as well as the amount of working capital you need, and whether the lease will give it to you."

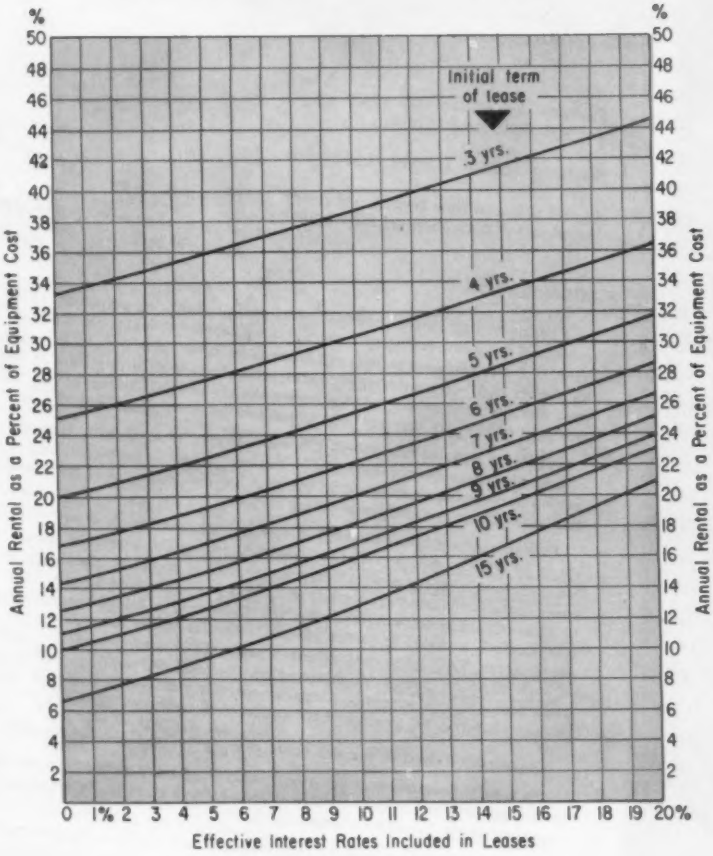
David P. Boothe of Boothe Leasing says, "If the equipment makes more than it costs, it's O.K." Another lease advocate, W. P. Malley of U. S. Leasing comments, "It's the profitability of the particular machine that counts, rather than cost compared to a loan. Leasing allows you to get modern equipment and put it to work."

This argument may not appeal to conservative textile treasurers who like to look carefully at costs, borrowing restrictions, cash flow, stockholders relations, and the like. Leasing at from 10 to 15% does rank higher than the interest cost of a bank loan (6 to 8%), a conditional sales contract or chattel mortgage (8 to 12%). But it may be less than some factoring arrangements (12 to 18%). The chart (right) shows how to put leasing on an interest-cost basis, so you can compute the cost and compare it directly to other financing costs.

A combination cash-budget and return-on-working-capital calculation will lay out the future costs and return from a lease-or-buy plan.

Another more complex method, called "present value," is used by large companies such as Textron, Inc. It allows you to compare any lease-and-purchase plan by calculating the present worth of all the future payments on the lease-or-buy plan, such as the lease cost itself, interest, principal amortization, depreciation, and other similar costs.

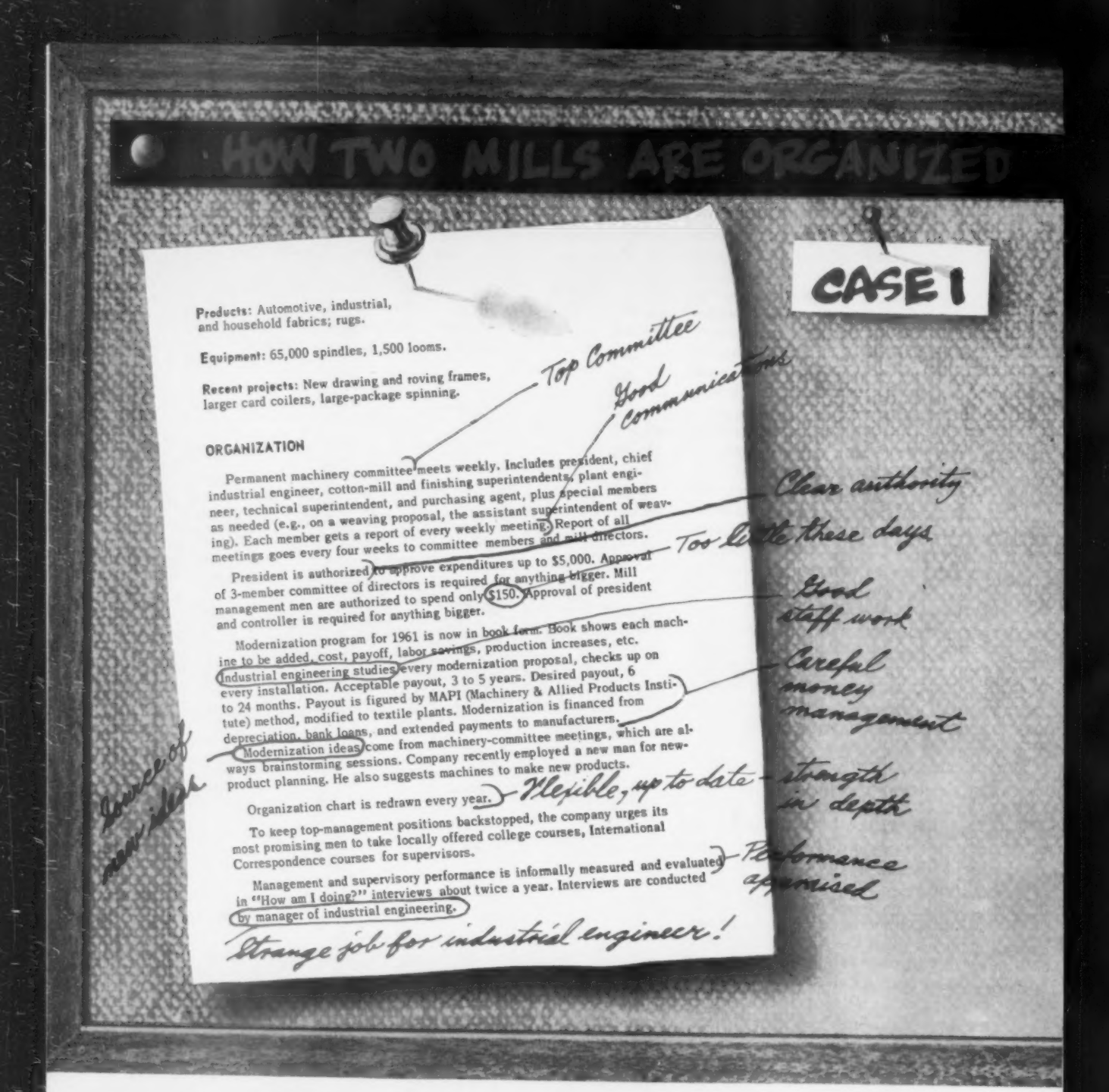
How to Estimate Interest Rates on Equipment Leases


%
Initial term of lease
3 yrs.
4 yrs.
5 yrs.
6 yrs.
7 yrs.
8 yrs.
9 yrs.
10 yrs.
15 yrs.
Annual Rental as a Percent of Equipment Cost
Effective Interest Rates Included in Leases
0 1% 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20%
50 48 46 44 42 40 38 36 34 32 30 28 26 24 22 20 18 16 14 12 10 8 6 4 2

Lease experts feel that working capital—or the total cash, inventory, and accounts receivable—is particularly important in textiles. Though rates of return on working capital are low on the average, there are usually two serious peaks in need for cash. These come about when the season's stock of raw materials must be laid in to begin production, and when customers' accounts receivable are generated through sales.

Leasing allows the company to shift funds from fixed assets to current assets, by conserving working capital laid out for equipment and by putting equipment charges on a monthly, pretax basis as an expense. The freed working capital can be invested in inventories or accounts receivable, at the rate of return on working capital the firm has been earning. Check your last financial statements to get this rate. Divide profits after taxes by net working capital at the close of the year. This equals return on working capital. This rate ranges widely: Cotton cloth mills, 4.70; cotton cloth convertors, nonfactored, 6.97; outerwear, knitted, 8.25; hosiery, 7.78. These are average figures. Many firms, especially the larger ones, do much better.

New equipment puts even higher demands on cash and inventory. So working capital is at a greater premium. Talcott's points out: "You need more working capital in addition to that needed to pay for new machinery. It's when you have your biggest need for cash."


HOW TWO MILLS ARE ORGANIZED
CASE 1
Products: Automotive, industrial, and household fabrics; rugs.
Equipment: 65,000 spindles, 1,500 looms.
Recent projects: New drawing and roving frames, larger card coilers, large-package spinning.
ORGANIZATION
Permanent machinery committee meets weekly. Includes president, chief industrial engineer, cotton-mill and finishing superintendents, plant engineer, technical superintendent, and purchasing agent, plus special members as needed (e.g., on a weaving proposal, the assistant superintendent of weaving). Each member gets a report of every weekly meeting. Report of all meetings goes every four weeks to committee members and mill directors.
President is authorized to approve expenditures up to $5,000. Approval of 3-member committee of directors is required for anything bigger. Mill management men are authorized to spend only $150. Approval of president and controller is required for anything bigger.
Modernization program for 1961 is now in book form. Book shows each machine to be added, cost, payoff, labor savings, production increases, etc. Industrial engineering studies every modernization proposal, checks up on every installation. Acceptable payout, 3 to 5 years. Desired payout, 6 to 24 months. Payout is figured by MAPI (Machinery & Allied Products Institute) method, modified to textile plants. Modernization is financed from depreciation, bank loans, and extended payments to manufacturers.
Modernization ideas come from machinery-committee meetings, which are always brainstorming sessions. Company recently employed a new man for new-product planning. He also suggests machines to make new products.
Organization chart is redrawn every year.
To keep top-management positions backstopped, the company urges its most promising men to take locally offered college courses, International Correspondence courses for supervisors.
Management and supervisory performance is informally measured and evaluated in "How am I doing?" interviews about twice a year. Interviews are conducted by manager of industrial engineering.
Top Committee
Good communications
Clear authority
Too little these days
Good staff work
Careful money management
Source of new ideas
Flexible, up to date
strength in depth
Performance appraised
Strange job for industrial engineer!

'61 modernization

Your Next Move:

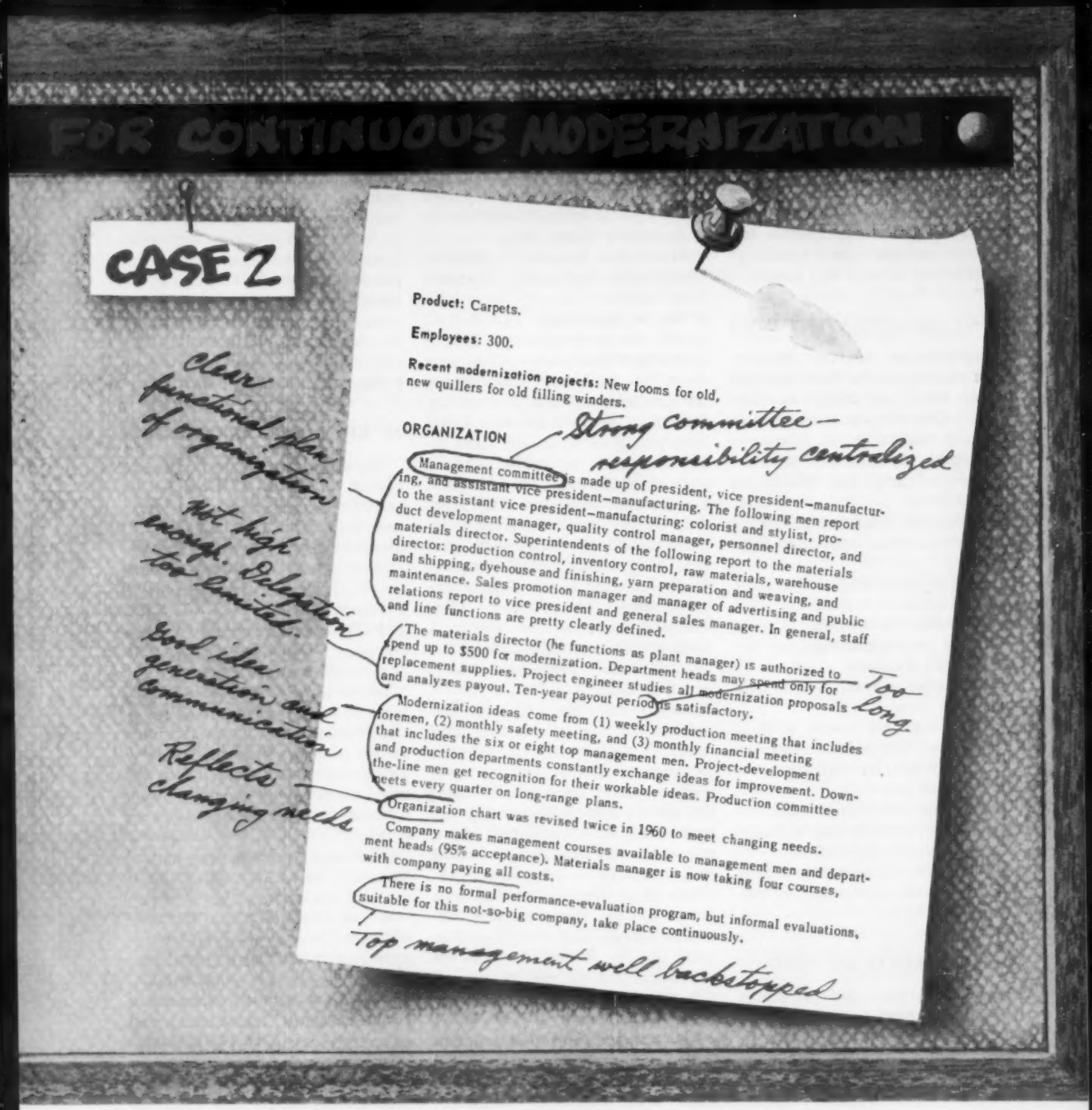
WHEN did you last take a long look at your company's organization? At the formal and informal structure of people, machinery, and plant that makes your company what it is?

Is this structure of men and machines doing the job that it is meant to do?

Is your management as modern as the machinery—spinning frames—looms—knitting machines—finishing equipment—in your mill?

Does the structure fit your company's needs today? Or are you still using a horse-and-buggy organization plan in this jet age?

Does your organization chart reflect what really goes on in your mill? Does it show how activities and people are related?


FOR CONTINUOUS MODERNIZATION
CASE 2
Clear functional plan of organization
Not high enough. Delegation too limited.
Good idea generation and communication
Reflects changing needs
Product: Carpets.
Employees: 300.
Recent modernization projects: New looms for old, new quillers for old filling winders.
ORGANIZATION
Strong committee—responsibility centralized
Management committee is made up of president, vice president—manufacturing, and assistant vice president—manufacturing. The following men report to the assistant vice president—manufacturing: colorist and stylist, product development manager, quality control manager, personnel director, and materials director. Superintendents of the following report to the materials director: production control, inventory control, raw materials, warehouse and shipping, dyehouse and finishing, yarn preparation and weaving, and maintenance. Sales promotion manager and manager of advertising and public relations report to vice president and general sales manager. In general, staff and line functions are pretty clearly defined.
The materials director (he functions as plant manager) is authorized to spend up to $500 for modernization. Department heads may spend only for replacement supplies. Project engineer studies all modernization proposals and analyzes payout. Ten-year payout period is satisfactory.
Too long
Modernization ideas come from (1) weekly production meeting that includes foremen, (2) monthly safety meeting, and (3) monthly financial meeting that includes the six or eight top management men. Project-development and production departments constantly exchange ideas for improvement. Down-the-line men get recognition for their workable ideas. Production committee meets every quarter on long-range plans.
Organization chart was revised twice in 1960 to meet changing needs.
Company makes management courses available to management men and department heads (95% acceptance). Materials manager is now taking four courses, with company paying all costs.
There is no formal performance-evaluation program, but informal evaluations, suitable for this not-so-big company, take place continuously.
Top management well backstopped

Update That Organization

Is your organization flexible? Can you change it quickly to meet new situations?

These are questions every mill manager must keep asking himself today. And he must act promptly on his findings. Why? Because upon the answers to these questions may well turn the fate of a company—your own company, in fact. For organization determines how your company reaches decisions—how it gets its tasks performed—how it controls men, machines, and money—how it meets change—how it generates and handles new ideas—how it gets men to do its jobs—how it staffs up for effective work.

So if you haven't looked at your organization plan recently—at the way your company gets its work

UPDATE THAT ORGANIZATION . . . *Begins on page 52*

done—it's high time you did so, right now. Even if you changed it just recently, better look again today, because these are swiftly moving times, and an organization that was new and just right a month ago could be out of date this month.

WHAT ORGANIZATION DOES

Organization enables management to perform its true function: to plan, direct, and control an enterprise. Organization achieves this by doing two things, as follows:

• **Grouping the activities** that are needed to carry out plans and achieve goals.

• **Defining the relationships** among the functions and the people in these groups.

Good organization has five basic aims. It seeks to insure:

1. **Reliable information.**
2. **Fast communication.**
3. **Sound decisions.**
4. **Effective action.**
5. **Sure control.**

And if you look closely at *good* organization, you'll find it mirrors a company characterized by . . .

. . . *clear purpose.*

. . . *clear definition of tasks.*

. . . *clear responsibility,* with authority to match responsibility.

. . . *clear interrelationships* among functions—and among people, too.

. . . *flexibility.*

WHERE CHARTS GO WRONG

In a limited sense, you can represent the organization of a company graphically—by charting it, that is. Organization charts are commonplace in industry today.

A chart serves a useful purpose: It makes visual the interrelationships of functions and people. This way, it makes a given organization quickly understandable (for instance, you can see instantly how many people report to the president). It also pinpoints some of an organization's basic weaknesses (for instance, you can see right away if too many people are reporting directly to the president).

On the other hand, a chart reflects organization only on a primitive level. It often oversimplifies something that is quite complex. That's why an organization chart can lead you astray if you take it for anything more than it is—if you follow it inflexibly—if you let it become a sacred cow.

Here's how too much reliance on organization charts can lead a company astray:

• **They're unrealistic.** They don't reflect what really goes on. They're formal and bareboned. They don't show the backstage relationships, the crisscrossing pipelines of information, the informal data swapping that goes on in the third dimension—that is, behind and in front of the flat chart. For instance, a chart may show that Walt Jackson, quality control manager, reports directly to the general manager. But it may not take account of the fact that Henry Slocum, superintendent of spinning, often meets Jackson at the soft-drink vending machine, where they talk over the mill's performance on a new fiber blend.

• **They're inflexible.** They seldom provide for special or temporary needs. Thus they become obstacles to progress. For example, a company president, reluctant to upset the checks and balances that are frozen into his organization chart, may look with something less than enthusiasm at a proposal to diversify the company's product line. Or a dyehouse superintendent with an idea for speeding production may quail at the formidable lines of communication in the chart and thus may let his idea die a-borning.

• **They're inhuman.** They don't weigh personalities, aptitudes, and skills. For example, where in the chart do you put the near-genius whose mind constantly crosses departmental lines? Where do you put the nonconformist who is a gifted chemist? What about the imaginative engineer who can't get along with other people? The skilled labor lawyer who also has a flair for public relations? If these people are problems, they are assets as well. In fact, every company needs a few of these creative "problem" people. Without them, progress slows down. Trouble is, they don't always fit into the pattern. The danger lies in trying to bend the man to the pattern—to the organization chart. The secret of success lies in bending the chart to fit the man so as to make best use of his unique gifts, whatever they are.

Moral of all this: Use your organization chart for what it is—a simple skeleton of the relationships of functions and people in your company. But don't become its slave. Instead, flesh it out, keep breathing life into it, keep adapting it to your company's needs day to day.

10 KEYS TO ORGANIZATION

Hoke S. Simpson, director of executive programs, Columbia University's Graduate School of Business, lays down 10 commandments for shaping an organization that will cope with today's demands on business management. Here are his 10 commandments:

1. **Determine** all the activities a company should undertake to achieve its goals. Then develop an organization plan from the point of view of these needed activities.

2. **Group** the activities according to the natural similarities among the activities and according to the usual combinations of abilities and interests that are characteristic of persons.

3. **Assign** persons to natural groupings according to their abilities and interests.

4. **See** that each person's responsibilities (duties), authorities (freedom to act), and relationships (accountability, supervision, consulting, advising) are fully expressed in writing, clearly understood, and completely accepted by the individual and by all persons affected by that position.

5. **Define,** clearly and appropriately, delegated authority and freedom to act and make them adequate for the responsibilities assigned.

6. **See to it** that decisions affecting specific operations and requiring approval are made, as far as possible, only one organizational step above the person who will put the decision into effect.

7. **Allow** no person to report to more than one superior.

8. **Limit** the number of persons reporting to a superior so that he can give each person adequate attention without depriving himself

of the time he needs for duties other than directing and supervising, such as planning and organizing.

9. Coordinate interdependent organization units (for example, quality control and manufacturing) through well defined organization arrangements and through clear policies and procedures.

10. Place final control of the functions of inspection and audit of operations in hands other than those of the executive who is in charge of the operations under review.

WHERE STAFF FITS IN

Though the border between line and staff (or service) in an organization is sometimes blurred in practice, the distinction is real, useful, and important in shaping an organization and making its functions and interrelations as clear and efficient as possible.

Line activities are those that move a company directly forward to its goals. Put it another way: If a company began to strip off its activities and abandon them one by one, staff (or service) activities would go out before line activities. In a textile company, for example, production is a line activity. So is sales. Both are basic. Without them, the company would have no reason for being. Line activities are the result of decisions by line management men and are under the direction of line management men. A textile-company president, for example, is a line executive. So is a general manager. So are a superintendent of manufacturing, a spinning-department head, a dyehouse supervisor, as well as a weaveroom foreman.

Staff (or service) work, on the other hand, is supporting work—work that makes the work of line people better, easier, faster, surer, and the like. It is work the executive himself (or the line department itself) would do if he (or it) had the time or the special skill required. Often staff work is specialist's work, calling for a high order of skill or special knowledge. Staff work includes planning, gathering facts, studying, expediting, advising, recommending, consulting, servicing, and the like.

Recruiting, selecting, and training new employees for an enlarged spinning capacity, for instance, is a staff function. It does not achieve the company's goals, but it does provide the company with the people it must have to achieve its goals. Other staff (or service) functions? Engineering, for instance. Also quality control, purchasing, maintenance, research, public relations, and the like.

If your organization plan is good, it will provide your company with the staff (or service) functions it needs. Sometimes these will be pretty elaborate. But not every company needs an elaborate set-up. It all depends on the size of the company, the complexity of its operations, the difficulty of achieving its goals, and the skills (or lack of skills) among its line people.

Indeed, the needs of any one line official will indicate what staff help—and how much—he should be given. In a small mill, for instance, the superintendent himself might have the time and the skill to administer a quality-control program. This way, he would be performing a staff function for himself. If he had the time but not the skill, you might provide him with a clerk skilled in sampling techniques and statistical analysis. This way, you would be giving him help to do his staff work.

In a big mill, though, chances are the superintendent would have neither the time nor the training for an extensive quality-control program. You'd have to provide him with a quality-control department—a staff function.

Watch out for some hazards when you organize staff (or service) functions. What hazards? Look:

• **Staff often increases overhead (administrative) expenses.** Be sure the payoff justifies the expense. Be equally sure that when the pay off ends, the staff doesn't perpetuate itself. Staff sometimes has a sly way of becoming part of the fixed overhead.

• **Staff creates some complex relationships.** A spinning superintendent may resist and resent what seems to be an intrusion by the maintenance head. What's more, the maintenance head may be tempted to issue orders to the production superintendent—tell him to shut down 50 looms while he repairs some electrical circuitry. Situations like these can be damaging and confusing unless line-staff relationships are spelled out carefully and communication channels are made clear and kept clear.

• **Staff often escapes review and analysis.** There's an understandable tendency among management men to keep their main eye on line operations—to watch for cost-improvement opportunities, to measure performance, to boost efficiency. This way, staff operations sometimes escape scrutiny—nobody measures performance, nobody revises goals, nobody analyzes costs. First thing you know, staff people are operating in their own little orbits at substantial cost to your company—but with diminishing results.

ROLE OF COMMITTEES

Most good organizations provide for committees—some permanent, some special and therefore short-lived. Committee members are regular line and staff management men who do committee work in addition to their regular duties.

Why committees? Because they bring collective knowledge and judgment to bear on problems. Because they help coordinate activity and boost cooperation. Because they result in interchange of information. Because special emergency projects sometimes come up that are so complex, so urgent, and so risky that they require "task force" treatment.

For example, some companies have a standing committee to explore new-product proposals. Suppose a men's hosiery company gets a proposal that would take it into stretch socks for the first time. Who would properly be on the committee, and why? The president, probably, who is the chief executive officer and the top decision-maker in this matter of new products. The sales manager and perhaps the market-research manager. The chief engineer, who would plan installation of the new machines and plant services. The production superin-

tendent of course. The purchasing agent, who must buy the new stretch yarn. The training director, who must train machine operators. Maybe even the packaging designer. Maybe others, too.

A group like this can divide the task of investigation, learn to understand each other's problems, and reconcile their respective needs with those of the group. If the president decides, on their recommendations, to go ahead, this same committee can schedule the project to completion, follow through with pilot operations and market testing, then swing into full production.

Secrets of committee success? You must clearly define its function and its goals. You must select its members on the basis of what they can add to collective skill and judgment. You must prescribe (or get the committee to adopt) procedures that will expedite the work and see it through to a conclusion. You must provide the clerical and staff help the committee needs. And you must select the right chairman.

Also, you must beware of the hazards that are inherent in committees. Committees sometimes act slowly. They often take time from men who might spend it better on their main jobs. They dilute responsibility. And there is the risk that the committee will come up with a compromise recommendation or finding that is weaker or less valid than the position of its best members.

DELEGATING THE WORK

Amid all the complexities that vex today's mill management man, one thing—and one thing only—keeps him this side of madness. That one thing is delegation.

What is delegation? It is passing some of your own activities to people whom you supervise. Within the range of your job and its activities, you usually pass along those activities that are at the lower level of importance or skill or sophistication. This way, you free yourself for upper-level activities of your assigned work.

Suppose, for instance, you move up from weaveroom superintendent to general superintendent. In your new job you still are ultimately responsible for weaveroom production. But you now leave direct supervision of the weaveroom (scheduling, personnel, maintenance, for instance) to your successor while you give your attention to coordinating activity in carding, spinning, weaving, and finishing; to planning, organizing and controlling.

Successful delegation involves three things:

- **Assignment of duties,** clear and unmistakable.
- **Grant of authority** (permission, that is) to make certain commitments, use certain resources, and take certain other actions.
- **Establishment of an obligation** running from subordinate to executive for satisfactory performance of the delegated duties.

In best practice delegation is always defined in terms of fixed points (that is, a subordinate is granted authority as long as he exercises it in line with company policies and aims), in terms of specific limits (for example, the amount of money a department head may spend without approval from higher authority), and in terms of relationships with subordinates (that is, the extent to which a delegate may command, induce, reward, discipline, or otherwise deal with employees).

The day of the one-man company is past. These days, you can't do it all yourself. The only answer is to delegate. But don't surrender supervision. With delegation you'll get relief from detail, you'll keep the job under control, the work will get done, and the man behind you will learn, in the course of time, to backstop you better and better. What's more, as you give your subordinate a chance to learn by experience, you'll strengthen the line of succession in your company.

LONG LIVE YOUR COMPANY!

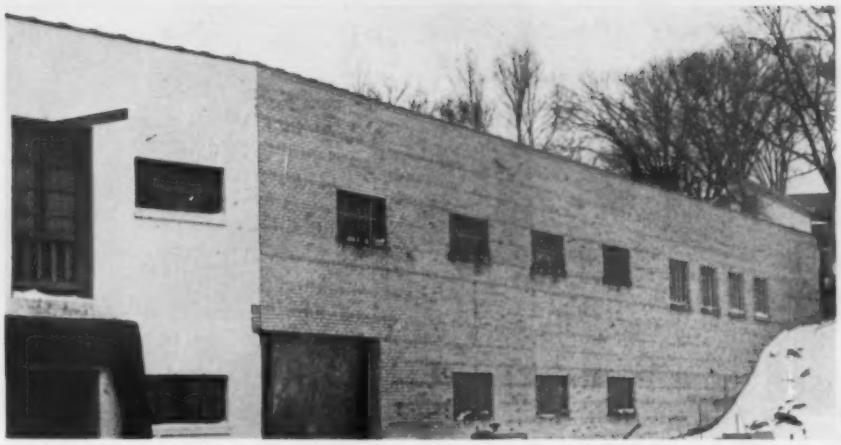
Every organization plan must contain the machinery to perpetuate itself. In other words, management men must come along in an unbroken stream to take up the responsibilities that others leave behind. If that was desirable when the textile industry was made up almost exclusively of small family-owned units, it is imperative today, when so many companies are publicly owned and when management is responsible to thousands of stockholders.

Somewhere in your organization there must be a systematic approach to recruiting, training, developing, evaluating, and rewarding executive talent. How? Here are some things you should build into your organization plan:

1. Position specifications. These describe the duties of each management position your company will need to fill in its future organization. Compare these needs with the executive skills your company now has in reserve, thus spot your recruitment and training needs. If your company is like most, you will discover you should create places in the organization chart for understudies for every position, then fill those places. You also will find need for a still lower level of young executive talent to backstop that second level and to move into place 10 to 20 years from now.

2. Appraisal and screening. Your plan of organization and your assignment of duties must include ways and means by which supervisors in your company regularly measure and evaluate the managerial performance of their subordinates and select those who deserve promotion. Your organization must have the flexibility that permits these young men to try their skills in a wide variety of jobs under different kinds of supervision—and the resources that will fill their needs for further training.

3. Executive development. Here (as in 2 above) your company's organization should provide a wide range of job assignments to develop a variety of skills, to broaden knowledge, and to season immature judgment. In this program your company should set up a systematic plan for committee assignments, participation in conferences, enrollment in executive-development courses, and special jobs. Indeed, your company may find it wise and practicable to provide some kind of help in the personal adjustments these men sometimes need.



NEWEST ADDITION at Borg is this 47,500-sq.-ft. area to house expanding production, warehousing, and new offices.

NEW WAREHOUSE has 13,600 square feet of space in two floors. Ground floor is cement, second floor is hardwood.

'61 modernization

Modernizing by Creating a New Product

Once this knitting mill was on the verge of closing up. But its former owner got an idea. And that idea has spearheaded a $5-million development of a new product that isn't through growing yet.

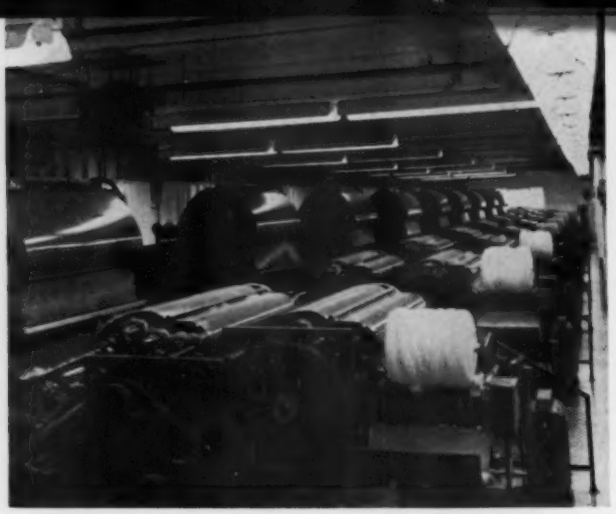
THE PHOTO above shows the latest addition to Borg Fabric Div., Amphenol-Borg Electronics Corp. This addition is at the Jefferson, Wis., plant. But it's nip and tuck between the Jefferson plant and the Borg Delavan (Wis.) plant. As soon as one mill progresses, the other makes a jump forward, too.

This whole cycle started in 1948. From only half a dozen latch knitting machines that were about to be scrapped, the Borg Fabric Div. has created a completely new product and a new market in knitted pile fabrics.

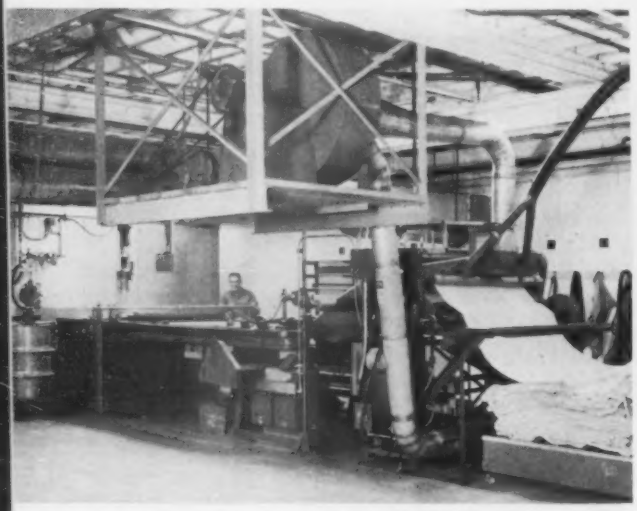
Presently, three big companies and a sprinkling of small ones are producing these pile fabrics with an over-all sales value of a shade under $75-million—a good-sized market.

But Borg was first. And today, it's a giant in this field. The late George W. Borg, one of the organizers of the huge Borg-Warner Corp., poured $5-million into the development and sales of knitted pile fabrics and rebuilt and expanded two mills to produce the fabrics—a project that confirmed

BLENDING is done at this picker at 1,000 to 1,500 pounds per hour. Domestic and foreign wool is bought already scoured.



SLIVER is made on card feeds and garnetts at over 80 pounds per hour. Man-made fibers hard to open are precarded.



COATING is applied to a tenter after fabric is brushed on a machine designed and built by Borg. Drying operation follows.

SHEARING is another pile-fabric process. Shearing equipment is part of a $300,000 automation program.

CREATING A NEW PRODUCT . . . *Begins on page* 57

his creative ability in machine development and company formation.

In January 1959, the Borg Fabric Div. became a Division of the Amphenol-Borg Electronics Corp., through a consolidation of the George W. Borg Corp. and the Amphenol Electronics Corp.

Borg's first venture in textiles began just before World War II when he bought a knitting mill at auction in Delavan, Wis. (Bradley Knitting Mills). He then moved some of his other manufacturing facilities from Chicago to Delavan including machinery to make auto clocks, electronic devices, and time fuses.

But he continued the knitting operation successfully throughout the war. After the war, he decided to cast off knitting. But while puttering around the building, he came across half a dozen knitting machines that had been idle.

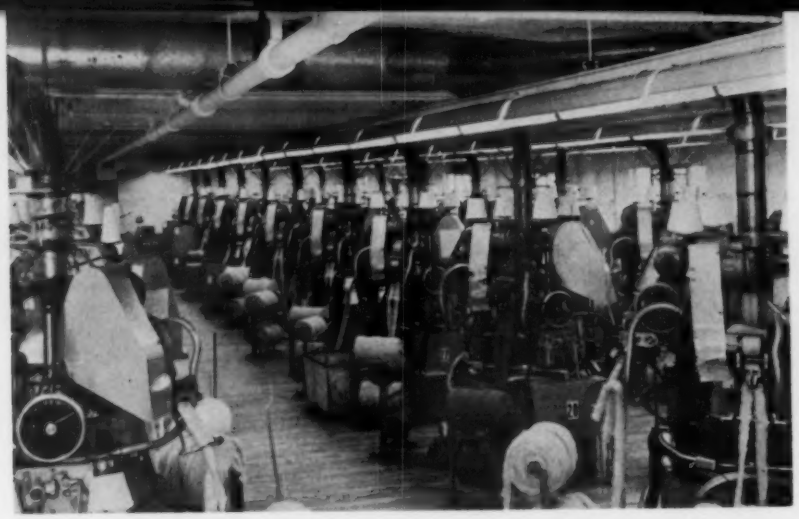
HATCHING AN IDEA

These machines trapped Borg. So he and Robert Brandt, plant engineer, began redesigning the machines—Borg himself didn't quite know for what use.

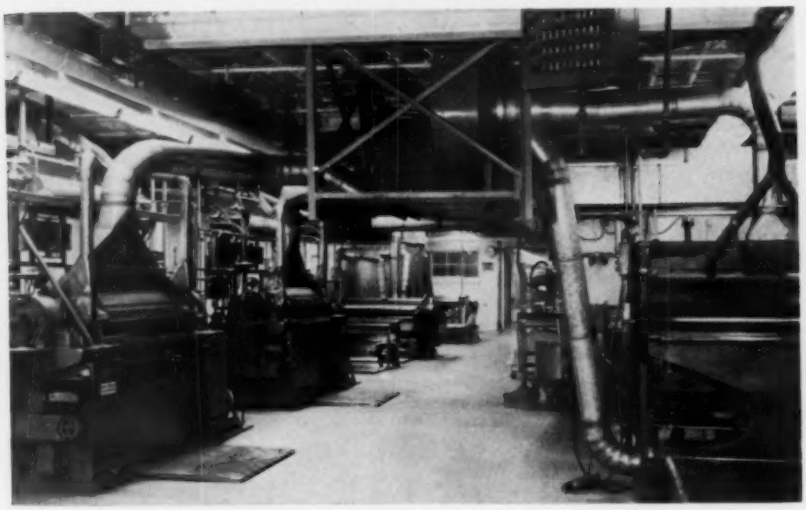
But soon the machines were knitting fabric with a thick pile that was cut into round wool pads for polishing automobiles. They sold well to auto manufacturers. Today they still are a big item in Borg's sales. Wool was the only fiber being used at that time.

Next came covers for paint rollers made with Dynel fibers that didn't mat from latex-based paints as lambs-wool pads did. This fabric is still prominent on Borg's sales list.

With the Korean War and soaring wool prices, a whole group of new markets opened at Borg. By this time, Borg had perfected his method of feeding roving (sliver) to the knitting machines. He had developed new finishing methods for his new pile fabrics, and he had also pro-



KNITTING is done at both Delavan and Jefferson on identical machines. Sliver feeds were invented at Borg. By pigtailing balls of sliver, machines run continuously.



ELECTRIFIERS give the fabric the live hand for which Borgana is famous. Fibers are elongated so that they stand up permanently, and the fabric is given a sheen.

duced new combinations of man-made fibers.

Garment makers clamored for the fabrics for storm-coat collars and coat and jacket linings. New markets came in parka hoods, sports boots, snow suits, and slippers.

At this time, Carl J. Seifert, Sr., owner of Seifert Woolen Mills, Jefferson, Wis., became prominent in Borg's manufacturing. Seifert's organization had been furnishing sliver to Borg for the pile of the fabrics, and was expert in processing natural and man-made fibers.

Then in 1953, Borg bought Seifert's mill. With the acquisition of Seifert textile operation and staff, Borg had the manufacturing know-how required to complement the engineering and development of his own rapidly growing organization.

EXPLOITING A FABRIC

A pile fabric that was not only warm and light but that women could proudly wear in public was developed. This idea culminated in Borgana, which furnishes Borg's dominant position in the pile-fabric market today.

Borgana starts out, like other Borg fabrics, as roving (actually sliver) taken directly from a garnett. This sliver makes fabric pile.

The sliver is fed by rolls, covered with card clothing, into the knitting machines, where the needles grab it and lock it into the knitted backing as an integral part of the backing.

At the beginning, Borg used his large machine shop to develop the knitting machinery. Today's expert machinists are forever busy developing more new ideas.

The original Borgana was made from Orlon and Dynel, and today the blend of fibers is Orlon and Darvan. In some fabrics, lush natural fibers are blended with those that are man-made.

Today Borg produces the famous Borgana coat fabric, and also is the pace setter for high-quality liner fabrics, which involve tremendous volume.

Borg's dream to produce a man-made-fiber pile fabric that could compete with fine animal pelts in the flossy world of high fashion came true. Borg sells its present fabrics for as much as $25 per yard.

Like fur, it's warm—beautiful to look at and feel—and it's durable. Unlike most furs of comparable pile depth, it is lightweight (an average full-length coat weighs only a little over 3 lb.) and is resistant to mildew and moths.

It is easily cleaned by fur-cleaning methods, will not sag, sit out, or wear excessively at the collar and waist line.

OVERSHOOTING THE GOAL

Results of pile fabrics in women's coats have considerably overshot Borg's original goal. Just this spring, this new release was published in newspapers around the country: "Jealous of the silkiness and drapability of some fabrics spring wraps are made of, pelt makers sheared the Alaskan seal to give a flat, silky, and golden iridescent appearance. The result is a sheer lightweight fur introduced by the seal industry to compete with cloth coats in mild weather."

In 1950, the sales organization of the new Borg Fabric Div. was organized when Fred Faytle moved in

as sales manager. Faytle promptly set up a sales merchandising and advertising program. Today, Borg has a large advertising budget primarily for Borgana. But 50 different fabrics in 57 colors are being made at present. One recent and important fabric is an all-Zefran shaggy pile used for rug trim and a liner. Over $3-million has been spent in advertising in nine years.

ADDING NEW PLANT

On the death of George Borg last year, there has been no slowing down of plant modernization. Latest modernization was completed only this month. It is part of a $4.5-million building program of Amphenol-Borg and is a $345,000 addition to the Jefferson plant. This building added 47,500 sq. ft. of space and is being used for offices and expanded knitting operations.

The new building is built onto the older mill with the identical features of an addition of 2½ years ago. Walls are standard brick backed by concrete block. First-story floors are concrete, and second story are hardwood. Roofing is built up.

One new feature, however, is an air-changing system built into the roof. In summer, fresh air is drawn into the building. In winter, the fresh air is drawn in over hot coils to heat and ventilate.

The two Borg plants both knit pile fabrics. With the completion of the present addition at Jefferson, both plants will have an equal number of circular knitting machines—a total of over 100. There's 107,000 square feet of floor space at Delavan and 135,000 square feet at Jefferson.

Sliver is made for both plants at Jefferson. Principal fibers used are domestic and foreign wool already scoured and Orlon, Dynel, Verel, Creslan, Acrilan, and Zefran. Man-made fibers are 3 to 5 den. in lengths up to 3 inches. All fibers are stock dyed commercially before they come to Borg. About $½-million of fibers are always kept in stock.

Fiber processing at Borg starts with opening and picking on the ground floor where stock is blended. Blending does two things: blends fibers, and produces the desired color. Borg's modern lab right next door to this production department is kept busy through the day testing colors.

Production per picker is 1,000 to 1,500 pounds per hour. Blended fiber is blown into bins as it is processed. Then it's usually removed from the bins and opened again.

The blended stock is blown into bins on the floor above where it is fed to any one of 10 Procter & Schwartz card feeds each attached to a Proctor & Schwartz garnett.

Man-made fibers that are particularly hard to open are precarded on a Proctor & Schwartz machine. Production per garnett is over 80 pounds per hour. Sliver is doffed in balls like a warp. This system was developed by Carl Seifert, Sr.

As the balls are doffed, they are packed four per case to be taken to the knitting rooms. Four balls weigh 25 to 30 pounds. One ball in every case is checked for sliver weight by 1/100 pound per 12-yd. length. Tolerance is 2%.

These garnetts are five years old, but in appearance and performance they're equal to brand-new machines. They are taken down, cleaned, and overhauled each year.

KNITTING— A WHOLE NEW IDEA

The knitting machines (more than 100 of them) are Wildman latch-needle circular machines for 45 to 60-in. fabrics. Borg has added its own carding heads to these machines. The 22 in. dia. cylinders have 697 needles in 36 gage.

Fabrics are knitted in many pile densities. The fabric is 54 inches wide at the machine and is split as it's knitted.

Knitter mechanics are each responsible for a battery of machines. Machines are overhauled once a year. Overhauling starts in November as the slack season begins. By the end of January, all machines are in excellent condition and ready to run with little trouble until the next overhauling cycle.

Sliver is fed from the ball into the card licker-in of Borg's head. Then the fibers are transferred to the card cylinder and spread evenly over the surface of the cylinder by workers and strippers.

The doffer operates over the knitting-machine needles and removes the fibers from the cylinder. The rotating doffer sweeps the fibers from its card clothing into the needle hooks.

The transferred fibers are drawn downward with the needles as a backing yarn is fed to the needle hooks. Air blasts from narrow-mouthed pipes blow the fibers toward the machine center.

Borg has licked the lint problem that's common with pile-fabric knitting. At Delavan, a recently completed central vacuum system draws the lint from all machines into one large bin.

FINISHING THE FABRIC

Borg's finishing process, as in knitting, is a continuation of its own developments supplemented by standard commercial machines.

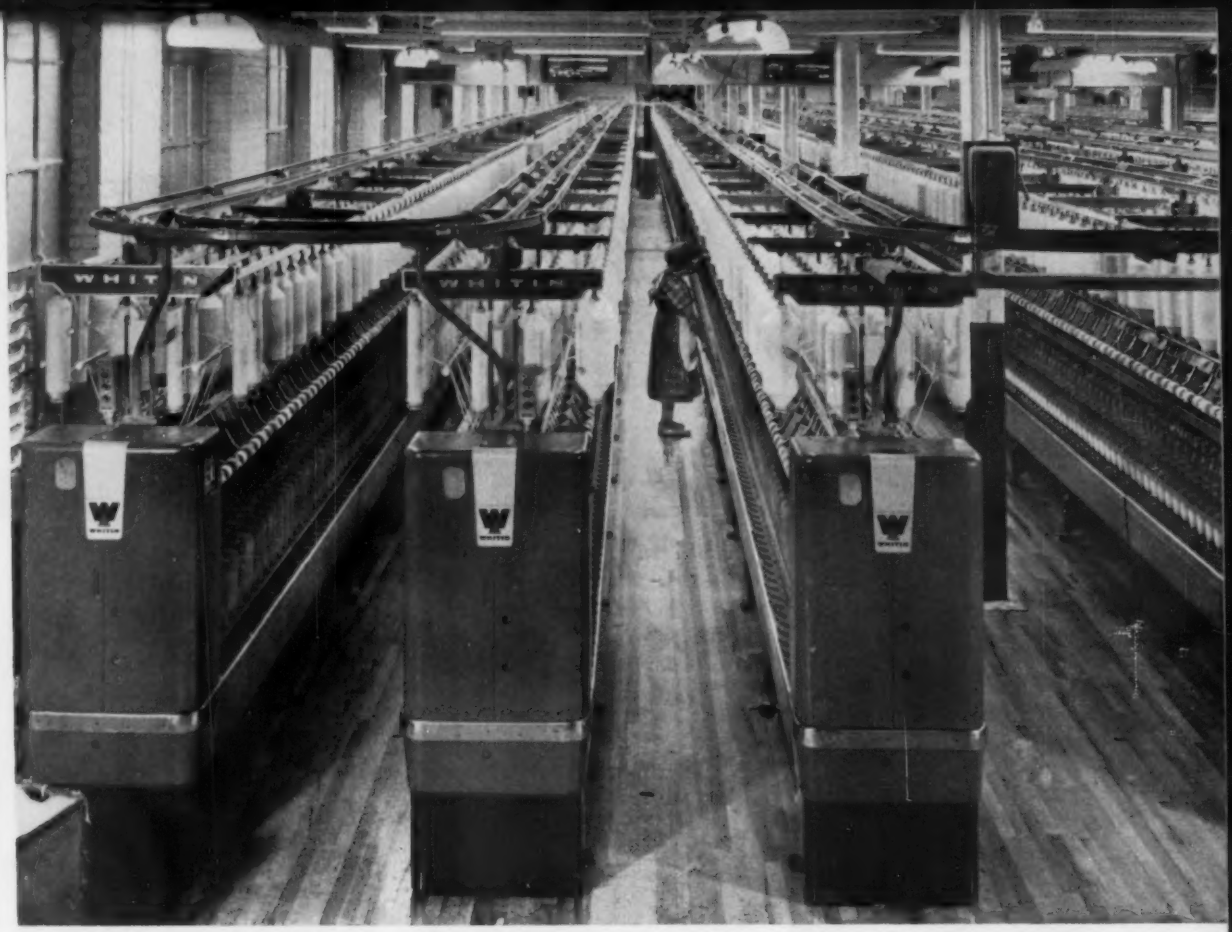
Processes involved in finishing are brushing, applying backing coating, curing, "electrifying," and shearing.

The fabric is knitted and finished in various widths. The backing coating stabilizes the fabric.

The electrifying operation is a complete Borg development on machines built by Borg. It gives the fabric a lustrous appearance.

The surface of the cylinder is cut with grooves and helix and is heated. When this cylinder rotates, it combs the pile in one direction and then another. The static electricity and vacuum created open the pile in all directions.

This first electrifying is followed by shearing. Spraying with silicone further improves the finish. Then two more passes through the electrifying machine, reversing the pile each time, completes the finish.



SPACE SAVING: Three spinning frames occupy the same floor space formerly required for two frames.

modernization '61

This small towel mill is successfully competing with the giants by keeping its machinery and methods up-to-date, and cutting spinning-labor cost 22%.

How New Machinery Boosts Small-Mill Production

MODERNIZATION at Blair Mills, Belton, S. C., is paying off in a big way. Spinning-labor cost is down 22%. There's also a saving in yarn formerly bought in the open market. Another big benefit: a sharp upturn in quality level of finished toweling.

Altogether, Blair has spent $832,000 on modernization during the last couple of years—no small item for a mill with less than 7,000 spindles. Most of this money was spent on new Whitin Piedmont spinning and high-speed preparatory equipment. Other improvements at Blair's Belton mill include a 210-ton, York, retrigerated, air-conditioning system ($35,000) and a new welding and carpentering shop ($28,000). New finishing equipment also was added, and 22 new C & K C-7 looms.

New yarn-manufacturing equipment, acquired on a five-year lease, consists of 26 Piedmont spinning frames, three 14x6½ Hi-Pro roving frames, 16 deliveries of two-process M-6 drawing, and an Axi-Flo cleaner.

Turn the page

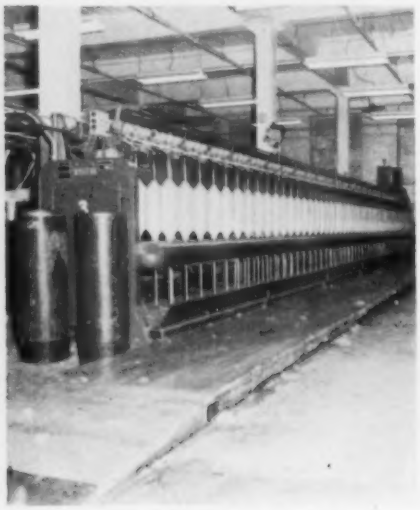
HAND BRAKE (easy to reach) stops spindles almost instantly.

DRAFT GEAR is changed in one-third of the time previously required.

CREEL holds over one bale of cotton when fully loaded with 4½-lb. bobbins.

BIG COILERS and metallic clothing have greatly improved carding efficiency.

NEW DRAWING runs at 614 feet per minute, puts 46 pounds in each can.



HIGH-SPEED ROVING FAME has platform around it to reduce fatigue.

NEW MACHINERY . . . *Begins on page* 61

High spot of the modernization program is the new spinning—the first complete production installation of the Piedmont frame.

The 6,864 new spindles replace 7,724 old spindles and produce about 9,000 more pounds of yarn per week.

Four spinners per shift now make the required 68,000 pounds of yarn in a 136-hr. week. Formerly, seven spinners per shift were required to produce 59,000 pounds on the old equipment.

Work assignment is 15 sides, compared with 9 sides formerly run. Spinners put up ends, creel, and do most of the cleaning. Two American Monorail frame and floor cleaners cover the frames every 9½ minutes, which simplify cleaning.

Big advantage of the new frames is that their 27-in. width made it possible to place three machines in the floor space formerly occupied by two. The floor had to be leveled and supported with steel jacks, however, because of the additional weight. Each frame holds over a bale of cotton.

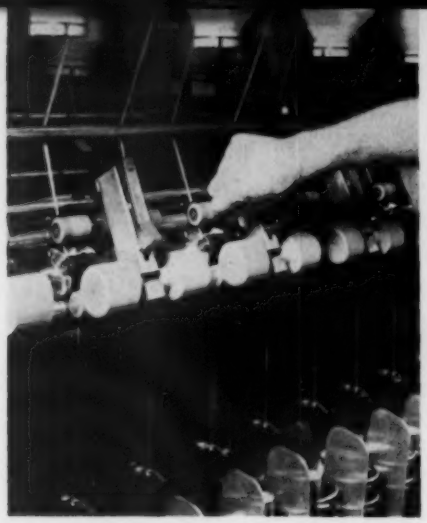
CUTTING POWER COSTS

The new frames are 4-in. gage and have 264 spindles each. They are driven by 18-hp. motors, much bigger than the old 7½-hp. motors. Power cost per pound of yarn is lower today because of the higher rate of production and more efficient operation.

Blair spins both warp and filling from a $\frac{1}{16}$-in. Middling cotton (light-spot) made into 0.62-hk. roving. A 2½-in. ring is used to spin the 15.5s (38 Tex) warp. A 2¾-in. ring is used for the 12.25s (48 Tex) filling.

For the 15.5s, front-roll speed at present is 185 rpm., spindle speed 9,200 rpm., traveler speed 6,021 fpm., draft 25, and twist multiplier 4.25.

For the 12.25s, front-roll speed is 185 rpm., spindle speed 8,800 rpm., and draft 20. About 0.44 pounds of yarn is spun on a 12-in. bobbin



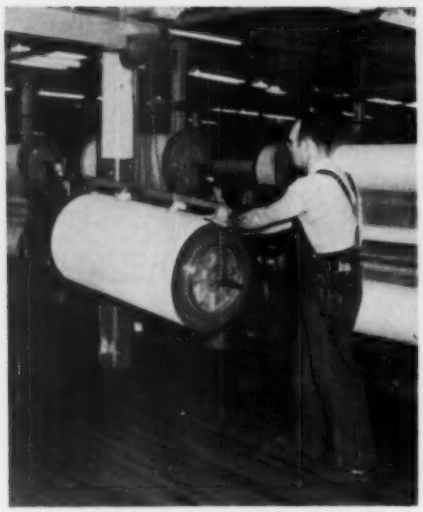
DRAFTING AREA is open for easy cleaning and piecing up.

WASTE MACHINE in the cleaning line takes out a lot of trash.

The 16 new deliveries of Whitin drawing replace 30 old deliveries. The new machines run 614 fpm., compared with 182 fpm. for the old drawing. Directly traceable to this new drawing is an increase of 200 points in yarn break factor. Evenness on the Saco Lowell tester dropped from 28 to 22%.

The 18x42 cans hold 46 pounds of sliver, about four times as much as the old cans held.

A big saving was made at roving where three operators are now doing the job that formerly required five persons. Here, eight old 10x5 and 12x6 frames were replaced with three 14x6½ Whitin machines that produce 4½-lb. packages. The machines have 96 spindles each. Front-roll speed is 208 rpm.



HOIST-CONVEYOR makes it easy to move beams from slashing to weaving.

SLACK-LOOP WASHER runs 135 yards per minute, has speeded up bleaching.

WEAVING—EASIER

Beam-handling is now easier. An American Monorail lift was installed that handles beams with 26-in. heads, 2 inches bigger than formerly used. This device does not cut out any labor, but it has reduced the incidence of strained backs.

In the bleachery, a new slack-loop washer (Greenville Steel & Foundry Co.) has cut the cycle some two hours a day by doing a better job and keeping down tangling. Goods are dried in a new Proctor & Schwartz loop dryer that has cut drying labor cost 33%. Drying is better and creasing is reduced.

on the 2½-in. ring. Tests consistently show breaking strength and evenness to be good.

"We like the Piedmont frame," says President Rice, "for a number of reasons besides its low-cost production. When a drive belt breaks, only one spindle stops—so a new belt can be installed without stopping the frame. The frame is easier to clean because there is no cylinder to create a lot of air turbulence. The antifriction rolls and spindles require little attention, and draft gears can be changed in one-third of the time we used to spend. The big roving packages have cut creeling time and cost, and the frames are much easier to overhaul."

IMPROVED CARDING

Blair at present is laying down 32 bales of cotton and feeding from 16 bales. The cleaning line consists of four blending hoppers, one waste hopper, a gyrator, a SuperJet cleaner, and the new Axi-Flo cleaner.

In the card room, metallic clothing has been put on the doffer and cylinder of 34 cards, and 18x42 McDonough coiler heads have been added. Card production is 16 pounds per hour. Cards now are stripped once a week compared to every two hours. No grinding is necessary. These changes eliminate one person.

MANAGEMENT TEAM, President E. B. Rice (seated) and Superintendent J. Little, make decisions.

'61 modernization

Once this mill was old and decrepit. Walls were crumbling. Roof was 75 years old. Condensation was a bother. So management modernized—in just three months. And there wasn't a day's production lost.

Old Mill Gets a Facelifting

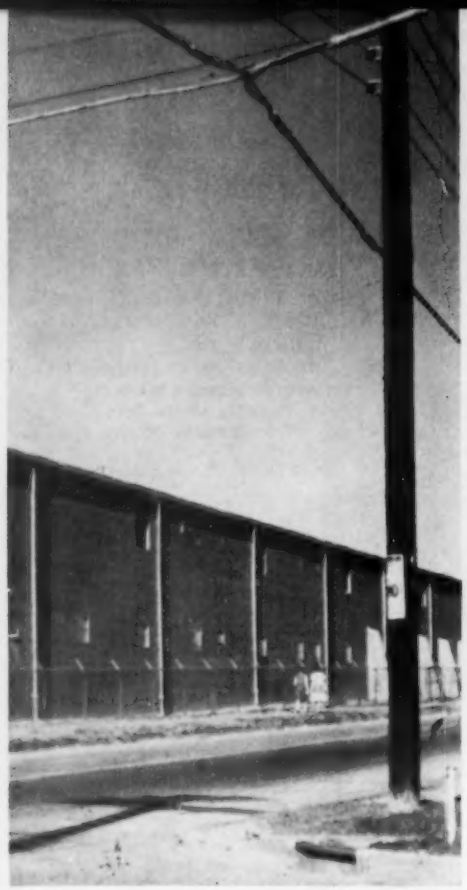
NEW ROOF, walls, and ceiling in three months. And not a day's production lost. That's the record for renovating Mill No. 1 at Joanna Cotton Mills Co. Primary purpose of the work was to eliminate condensation from the ceilings and walls (especially in the weaveroom) and to improve working conditions all over.

The big job was replacing the roof and ceiling without interfering with production in the rooms below. This job was accomplished by building a portable plywood subceiling on a steel staging over the machinery and moving it from place to place as the work progressed.

This canopy-like arrangement kept debris and dust from falling into the work. At night or when it rained, the hole in the roof was covered with a plastic film. Sprinklers, lights, and conduits were supported by the staging while each 10x50-ft. bay was open. The schedule called for completing one bay per day, which was usually done except during bad weather.

The ceiling is made of 2½x8-in. tongue-and-groove decking, pressure-treated to prevent rotting. The 20-year bonded roof, supported by new steel beams, consists of two layers of tarred vapor-barrier paper, three inches of foam-glass insulation, and four layers of separately tarred roofing felt. A top layer of white gravel reflects the sun's rays and reduces heat penetration.

To complete the inside renovation, everything except the ceiling was painted. Upper walls are painted white. Lower walls are soft gray. The ceiling cannot be



BEFORE: South side of the mill (above) shows evidence of 75 years' wear as well as the building style of the last century.

AFTER: Brick veneer (left) on the outer walls gives the mill a modern, streamlined look.

NEW ROOF is twice as long as a football field—650 feet. Part of a 925-ft. lap conveyor is shown in the foreground.

CEILINGS cannot be painted until the 2½x8-in. pressure - treated lumber cures. Lighting shown here puts 65 footcandles on the looms.

FOAM GLASS is used to insulate the weaveroom walls. Here, it is being installed between the old and the new brick.

COVERED WALKWAYS protect employees and stock from the elements. Office building is in the background.

FACE LIFTING

. . . *Begins on page* 64

painted until the lumber cures for 8 to 10 months because of the chemicals used in pressure treating the lumber.

Westinghouse trough-type fluorescent lighting, installed about three years ago, was replaced with new lamps that produce 65 footcandles of light in the weaveroom and 50 footcandles elsewhere.

The outside walls, composed of old soft brick made on the property about 75 years ago, were covered with new brick in the form of a veneer. Windows were sealed and covered with new brick. Foamglass insulation (three inches thick) is used between the new and old walls of the weaveroom. This exterior treatment makes the mill look as sleek and modern as if it were brand new.

Elimination of condensation has greatly improved operator comfort and safety. No longer do the walls and ceilings "sweat" and form puddles on the floor, which might cause an operator to slip and fall. Mildew and rot will be reduced to a minimum in the future.

The work was under the general supervision of Carl Franzen, shop overseer. Fiske-Carter Co., Greenville, S. C., was the contractor.

Technology Overseas

Process Decreases Sliver Deformity

There's a new theory, developed in Hungary, about the best way to wind slivers into large cans. Experiments show that the diameter of the sliver column should be greater than the inside radius of the can—and that the sliver cycloids should shift the width of one sliver. This usually means that the can speed must be slowed down. When the mill uses this procedure the sliver column has better protection and doesn't fall apart. The tests also show that sliver cans should not be overfilled, which can be prevented by a preset stop motion.

New Method Binds Nonwovens

Here's how a company in Hungary impregnates its lightweight nonwoven materials: The web rides on an endless net-like conveyor (without tension) through the bonding liquid (complete immersion), between saturation rollers (removes air from the web) and between press-rolls (controls the add-on). From the press-rolls the web moves to another endless conveyor in the drying chamber. This chamber is a vertical triangle. Each side of the triangle has a separate temperature control. At the top of the chamber, a blower draws off all vapors. Then the finished web winds onto a roll.

Humidity Control Uses Aluminum

An aluminum disk (with electrical properties that change with humidity) forms the sensing element of a new humidity-control instrument. The ¼-in. disk is anodized (which forms an aluminum oxide coating) and vacuum coated on one side with gold. A glass tube, with the disk mounted in the end, forms the probe. Electrical leads pass through this tube and connect to an electronic indicator (developed in Australia). The instrument will measure humidity from 0 to 90% and will operate as a continuous measurement or control of humidity, with $\pm 3\%$ accuracy. Calibration checks take 15 minutes with a six-cell aluminum block.

Heat Improves Seamless Hosiery

The welt of a seamless stocking needs maximum elastic properties. Yet a knitting machine makes the same number of stitches for the welt as it does for the ankle. Often the result is a variation in the welt stretch properties of a pair of stockings. A new heating device, developed in England, helps to overcome this problem. The knitting yarn passes over a heated bar that is controlled to 320 F. The results are improved welt elasticity, better appearance, and a reduction in snag tendency. But the manufacturer states that precise temperature control is necessary, as variation may cause uneven dyeing. Precise control can be obtained with an electronic system connected to all the knitting machines.

Russians Make Cotton Concrete

Russian chemists have found a new use for cotton—a concrete construction material from cotton-waste products. The material is three to seven times stronger than cement-based concretes and is fire-, water-, and acid-proof. In addition, the material insulates against heat and electricity, the Russians claim.

For more information on any item above, write Department KS, Textile World, 330 W. 42nd St., New York 36, N. Y.

'61 modernization

This three-mill company laid out a plan of attack on its spinning and finishing plants to lower its production costs, boost quality, and improve working conditions.

Spending $3.4-Million On Mill Modernization

THOSE PHOTOS below show how Standard-Coosa-Thatcher Co. (S-C-T) is completing a $3.4-million modernization of its spinning and finishing plants. Total investment amounted to about $2.5-million in its two spinning mills and $900,000 in equipment at two finishing plants.

"The program reflects S-C-T's policy of keeping all machinery in our operations modern and up to date at all times," says President S. Herschel Harris. "Some manufacturing and processing equipment only a few years old has been replaced with new equipment in order to assure continued economical production of top-quality products."

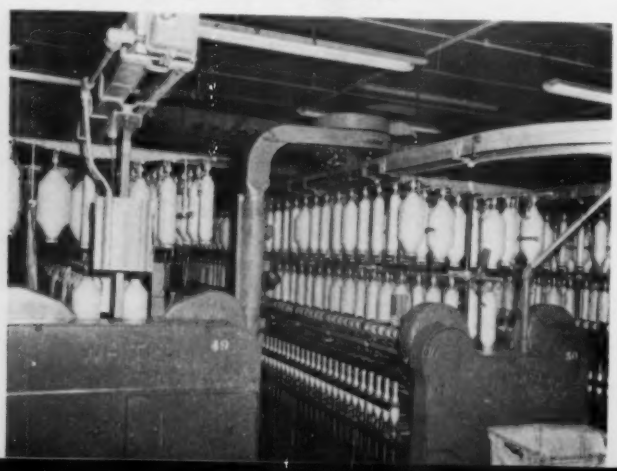
Net result is that the company is now producing much higher quality yarn at lower cost. And the new

PICKERS have been equipped with high-compression, pneumatic calender sections.

NEW LAP WINDERS make a 26-lb. lap. Here, Superintendent R. E. Hamrick observes the operation.

ROVING FRAMES being checked by Superintendent Hamrick are brand-new 10x5 machines.

UMBRELLA CREELS have been installed over 88 spinning frames. All drafting has been modernized.



finishing equipment will guarantee prompt delivery of yarn.

The program has brought the two spinning mills (at Piedmont, Ala., and at Chattanooga, Tenn. headquarters) a full range of new or modernized equipment. Brand-new machinery includes drawing frames, lap winders, combers, roving frames, warpers, and spoolers.

The finishing plants at Rossville, Ga., and Chattanooga, Tenn., have been much improved. At Rossville, mechanized yarn handling has smoothed out product flow and reduced costs. The new bleach house with its new equipment will speed production of white yarns. At Chattanooga, a new warp-bleaching range is about to be started up.

That's the quick over-all picture of what S-C-T is doing to insure its future. Now, look at what's going on at mill level. On these and the following pages you'll get a description of the new equipment and physical changes—along with methods of operation.

UPGRADING PIEDMONT

About $1.25-million was spent in 1960 in modernizing the Coosa Plant at Piedmont, Ala. This unit has 58,880 spindles running on 16s (36 Tex) to 80s (7 Tex) combed knitting yarn made from $1\frac{3}{32}$-in. M California cotton and $1\frac{5}{32}$-in. SM El Paso cotton. End products are hosiery, underwear, and outerwear. Production is about 150,000 pounds per 120-hr. week.

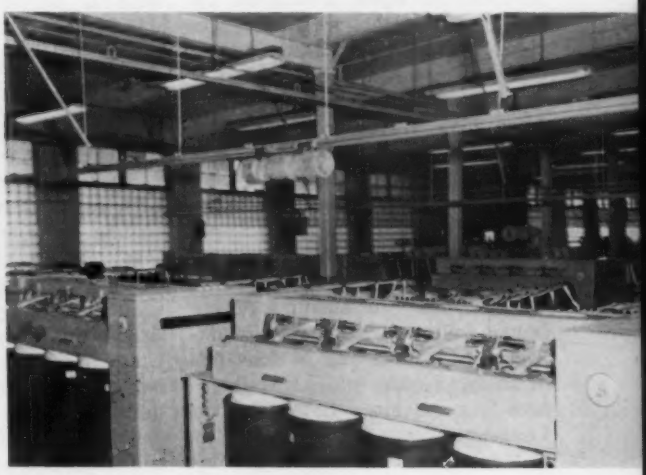
Opening-room equipment consists of three lines of equipment. Each one has a Lummus bale breaker, Aldrich pepper shaker, Aldrich beater, Super-Jet cleaner, and two Superior cleaners. The pepper shakers improve quality.

The picker room has six two-beater single-process Aldrich pickers that have been equipped with high-compression calender sections. The 13-oz., 54-yd. laps produced weigh 60 pounds each.

ADDING BIG COILERS

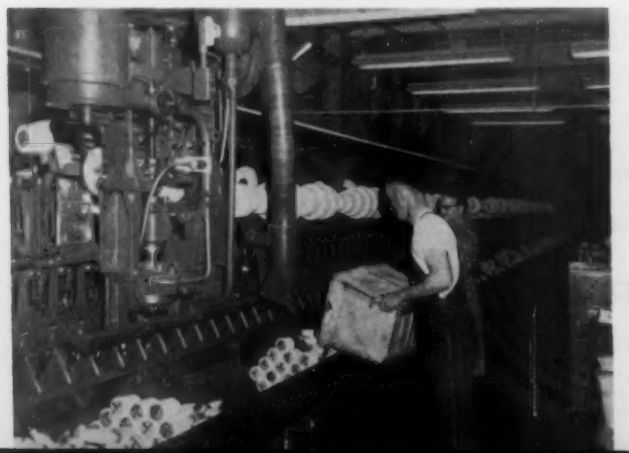
All of the 268 cards in operation have been equipped with 18x42 McDonough coilers. The large coilers and cans have increased the doffing interval substantially. Each can holds 38 pounds of 44-grain sliver. Cards run 6.27 pounds per hour on California cotton and 4.68 pounds per hour on the longer-staple Texas cotton. Cards are ground every 11 days

NEW COMBERS (28 are in place) feed into 16x42 cans at 53 pounds per hour.

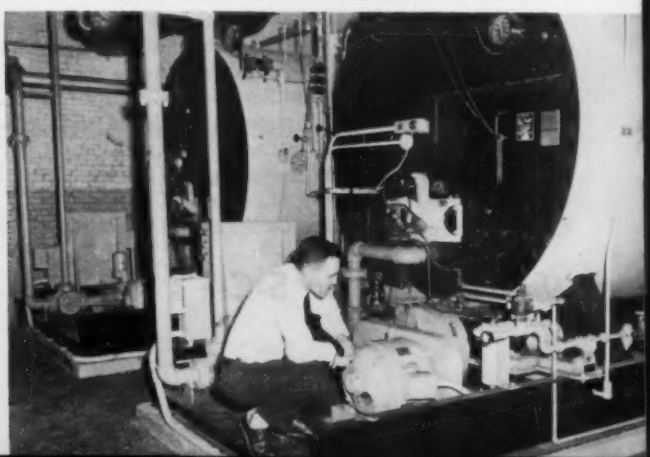


TRAVELING CLEANERS over all new high-speed drawing make the operation more efficient.

FOUR NEW SPOOLERS like this one replaced 25 hand spoolers. These machines represent a major investment.



PACKAGE BOILERS (both new) heat the mill. Here, Spinning Div. Manager Joe Thatcher checks gages.



and stripped twice each eight hours with vacuum strippers. At the time of grinding, cards are cleaned, blown out, and hand stripped.

Preparatory drawing, which follows the cards, is completely new. There are 48 deliveries of four-over-five Versamatic frames running 330 fpm. Here, the 44-grain card sliver is converted into 39-grain drawing sliver.

Old sliver and ribbon lappers were replaced with six new Saco-Lowell lap winders, 20 ends up, that make a 760-grain, 26-lb. lap on Saco-Lowell Micarta cores.

COMBING—ALL NEW

Showplace of the mill is the combing department where 28 brand-new Model 57 Saco-Lowell combers are producing a 55-grain sliver at 53 pounds per hour at 100% efficiency. Comber speed is 125 nips per minute. Each machine has six heads that feed into two 16x42 cans. The mill has built an electrical signal system on the combers that lights up when a machine stops or when it is ready to doff. This arrangement has increased operator efficiency from 91 to 95%. A major advantage of the new combers is that they take out far more pepper trash and specks than the old ones did. Also, evenness is much better. Long-term Uster variation is now 16%; short term is 3.23%.

More new Versamatic drawing frames follow the combers—24 deliveries of breaker and 24 deliveries of finisher equipment. These three-over-four machines run 267 fpm. Long-term Uster variation is 12% at the breakers and 9% at the finishers. Short-term variation is 2.5% and 2% respectively. All drawing is cleaned by a traveling American Monorail cleaner.

Part of the old two-process roving has been replaced with 14 new 10x5 Saco-Lowell FS2 frames with 126 spindles each. Spindle speed is 1,050 rpm., and draft ranges from 12 to 15 for 1.50- to 2.50-hk. roving. Bobbins weigh 2 pounds.

Other improvements in the roving department include modernization of two 10x5, 120-spindle and eight 8x4, 150-spindle machines. These machines have been equipped with the FS2 drafting system.

Long-term Uster variation for the new roving frames is 15.5%. Short-term variation is 3.15% The finer hanks have a long- and short-term variation of 18% and 3.5% respectively.

At spinning, all 58,880 spindles are being equipped with Dixon ball-bearing top rolls and saddles. Some 88 of the 240 frames involved have been equipped with F. A. Young umbrella creels and Casablancas bobbin holders. Parks-Cramer frame and ceiling cleaners have been installed over all the spinning frames, and Bahnson suction cleaning has been added under the drafting system. Spinners now clean only above the ring rail.

Spindle speed ranges from 7,000 to 10,000 rpm.; front-roll (1 inch) speed, 130 to 140 rpm.; draft, 20 to 40; and twist multiplier, 3.50.

Strong emphasis is placed on correct roll run-out, and tolerance is maintained at 0.002 to 0.003 inch by means of continual inspection and repair or replacement. Yarn evenness is checked by knitting actual samples and inspecting them visually as the customer would do.

Twenty-five hand spoolers have been replaced with four new 242-spindle Barber-Colman spoolers that run at 1,100 rpm. Cheeses weigh 2.4 pounds.

In the twisting department, four American Monorail and three Parks-Cramer combination frame, ceiling, and floor cleaners have been installed over the 116 frames in use. All machines are dry twisters with from 216 to 244 spindles each. Spindle speeds range from 5,000 to 8,200 rpm., and twist multiplier is 2.75 to 4.75.

Winding is done on 14 Universal Models 40 and 44 winders that run about 500 yards per minute. Warp packages weigh 4½ pounds each. Cones and dye packages are made to customers' specifications.

Waste control is important at the Coosa plant. Here's what's taken out at key processes:

Opening and picking...	1.80%
Carding	13.17%
Combing and drawing..	16.35%
Roving	0.37%
Spinning	1.85%
Spooling	0.37%
Twisting	0.58%
Winding	0.06%
Warping and reeling...	0.09%
Laboratory (test stock)..	0.19%

Quality control is another function that is considered vital at Coosa, and regular tests are run on stock going through each department. Good evenness is a must at all times. Instruments in the quality-control laboratory include a Spectrograph, Integrator, lap tester, and other devices for testing yarn evenness, strength, and appearance.

Other improvements at the Coosa plant include two new gas-fired, Cleaver-Brooks package boilers used to heat the plant and a 44,000-v. substation with secondary voltage of 550 v. Three old boilers have been converted into low-pressure, air-storage units to supply the humidifiers.

UPGRADING CHATTANOOGA

The Thatcher Plant (Chattanooga) also has been modernized in much the same manner as the Coosa plant. Cost was about the same—$1.25-million. This plant produces about 135,000 pounds of combed 8s (72 Tex) to 80s (7 Tex) industrial sewing thread and knitting yarns per week. Here are the modernization highlights:

Picking—One new Saco-Lowell single-process, two-beater picker added, bringing the total to six.

Carding — McDonough 18x42 coilers added to 250 cards.

Drawing — Old machines replaced with 40 deliveries of Versamatic drawing that runs 400 fpm.

Combing — Old machines replaced with 28 new Saco-Lowell Model 57 combers capable of producing 53 pounds per hour.

Roving—Six new 10x5 Saco-Lowell FS2 frames added, and 23 8x4 frames changed over to FS2 drafting.

Spinning—About 62,500 spindles (240 frames) modernized. Improvements include ball-bearing spindles, new drafting systems, and Parks-Cramer frame and ceiling cleaners.

For details on S-C-T's finishing-plant modernization, see p. 86.

TEXTILE WORLD
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May 1961

CHEMICAL TREATMENT AND FINISHING

IN THIS SECTION

News of the Month in Textile Chemicals 79

What's New in Dyes and Chemicals 82

Cutting Finishing Costs by Modernizing—Here's the second part of the story of Standard-Coosa-Thatcher (first part is on page 68). It's the story of a two-prong modernization program that speeds dyeing and finishing operations with a new network of efficient conveyors and material-handling techniques 86

Modernizing Step by Step—This dyeing-finishing plant doesn't wait until it faces a crisis before modernizing. Just the opposite. Management is always on the prowl for new equipment—scans every bit of information it can get its hands on for cost-cutting ideas. Results? A wide-ranging modernization program that keeps dyeing and finishing right up to date 90

Franklin Colorbred* Yarns

(Trade Mark)

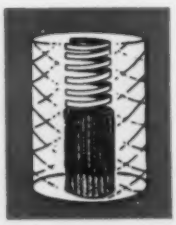
They Prove Their Quality HERE

*Fashion-Right and Quality Controlled

Color is the greatest sales builder in textiles today. But it must be the RIGHT color and the RIGHT shade. Give your salesmen the right colors and the right shades in your merchandise, tell them that the colors ARE right and why, and they will not disappoint you.

In Franklin Colorbred Yarns we offer you a selection of the right colors and the right shades. The colors and shades are right because they have been specified by fashion experts, alert to color trends throughout the fashion world. Use Franklin Colorbred Yarns and you won't be "following the leader"; you will be OUT IN FRONT!

If you do not have a copy of our latest seasonal color card, send for one today.



X-ray view of Franklin Package – the "secret" of uniform shades. Don't say "package dyed". Say "FRANKLIN COLORBRED"

Franklin Process COMPANY

Largest Package Dyers in the World of Natural and Synthetic Fiber Spun Yarns for More Than Half a Century

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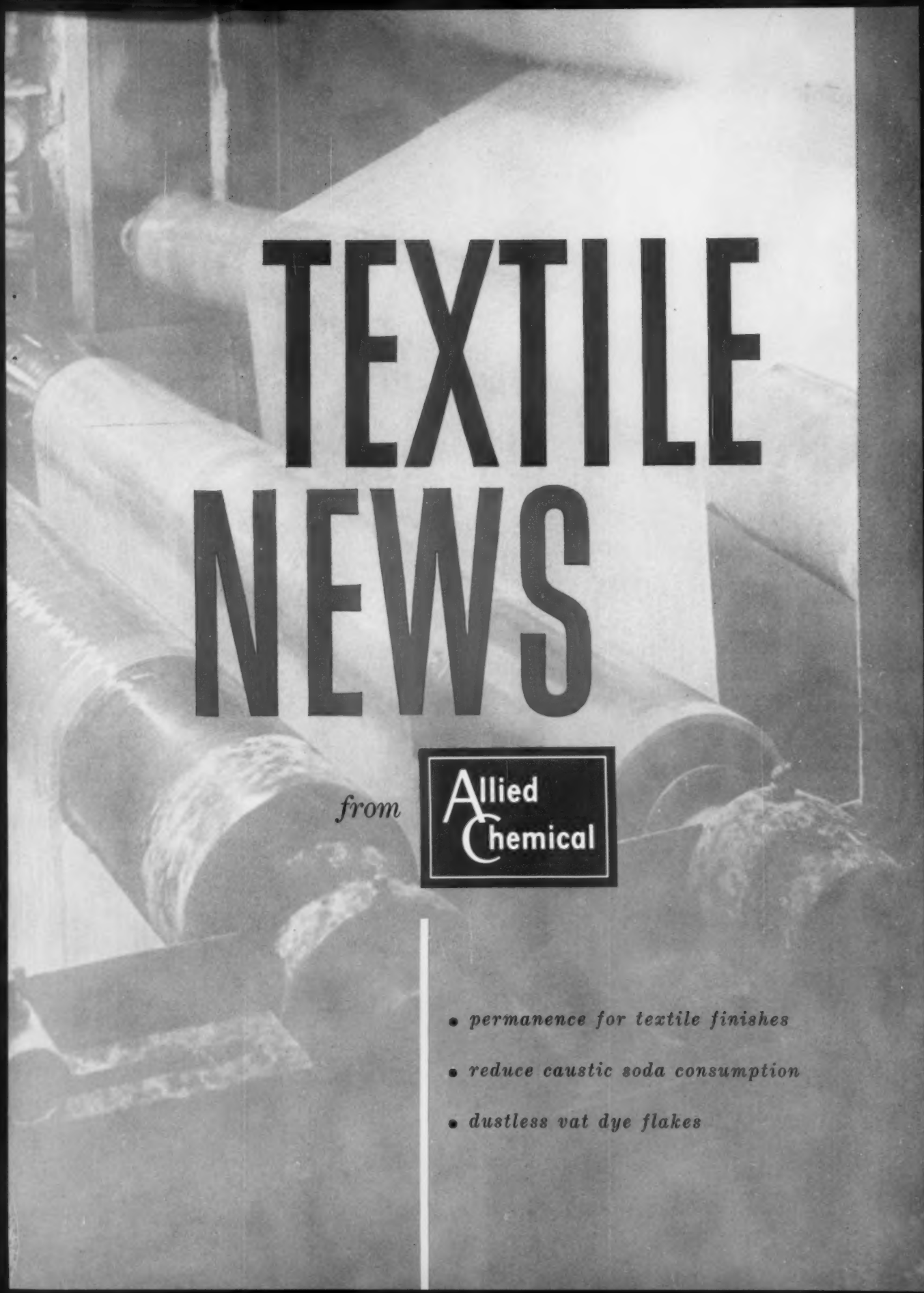

TEXTILE
NEWS
from
Allied
Chemical
• permanence for textile finishes
• reduce caustic soda consumption
• dustless vat dye flakes

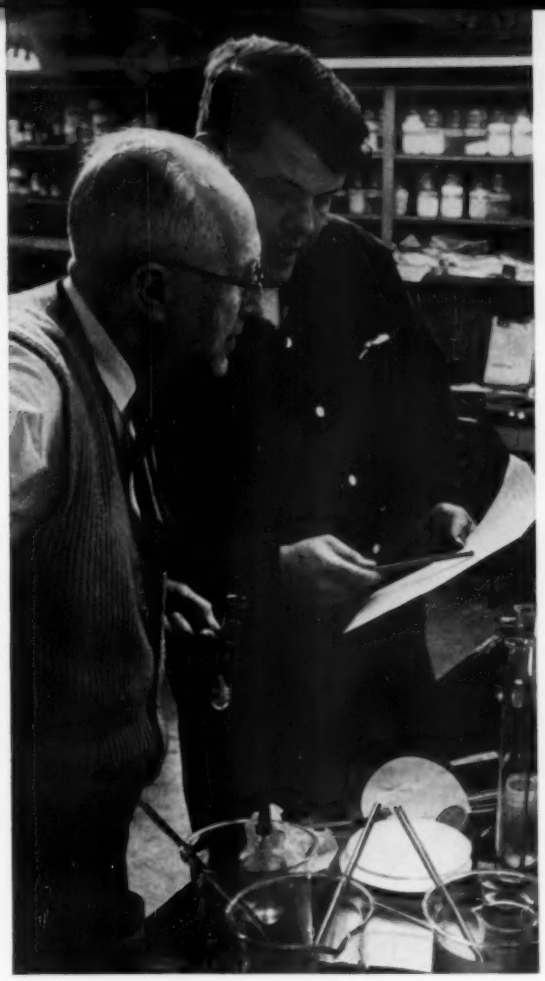
• *new permanence for textile finishes*
achieved with A-C Polyethylene-based emulsions

The new textile emulsions now being formulated with Plastics Division A-C Polyethylene benefit every fiber—natural or synthetic—in one way or another over other finishes. Take wash-and-wears, for example. Here, A-C Polyethylene overcomes loss of hand and tear strength when used as a softener along with conventional resins.

Emulsifiable A-C Polyethylene is permanent through multiple cleaning cycles. It increases abrasion resistance and tear strength . . . imparts extra crease resistance and better sewability.

Your textile chemical supplier either has an A-C Polyethylene finish on hand or can formulate one for your specific use—suitings, dresses, hosiery, curtains, rugs, upholstery. (We make A-C Polyethylene, not finishing emulsions.) Or write us for complete information.

■ **PLASTICS DIVISION**



Solvay technician and plant operator check efficiency of Solvay-designed caustic evaporator.

• *how Solvay works with customers to reduce consumption of caustic soda*

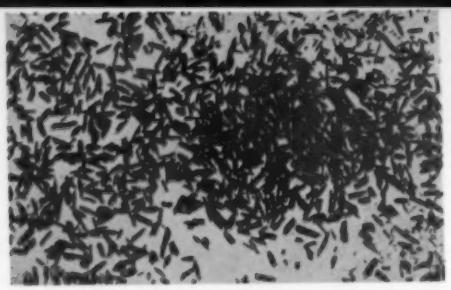
As a result of extensive improvement studies conducted by Solvay Technical Service in more than 50 bleacheries, caustic survey techniques have been perfected, mercerizer washing operations have been improved, caustic evaporation cheapened and a dialytic caustic purification process conceived.

From these developments have come drastic cost reductions—reduction or elimination of cloth shrinkage with increased yardage return and improved quality—usually without increasing steam plant capacity.

Textile trained Solvay consultants are available to cooperate with you on this or other "wet" processes.

■ SOLVAY PROCESS DIVISION

Photos courtesy of Fruit of the Loom



• *non-dusting vat dye flakes from Allied Chemical permit easier ha*

When it comes to ease of handling, there's just no comparison between National Aniline's vat dye flakes and ordinary dye pastes.

Because they're dry and stable, the dangers of drying out or freezing in storage, with consequent impairment of dyeing properties or change in shade, are eliminated. Yet they can be poured easily, weighed cleanly and precisely, and dispersed in water in seconds.

Lower costs and tighter control result when you use National® vat dyes. Ask us for samples.

■ **NATIONAL ANILINE DIVISION**

handling, better control

• *basic to America's progress*

Allied Chemical

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PLASTICS DIVISION — A-C polyethylenes—Emulsifiable for sizing and finishing compounds; hot melt for coating and backing; ELASTEX plasticizers; Industrial solvents; Tar acids; Tar bases.

SEMET-SOLVAY DIVISION — Coke and by-products; WILPUTTE by-product coke ovens and coal chemicals plants and engineering services.

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Printed in U. S. A.

News of the Month in . . .

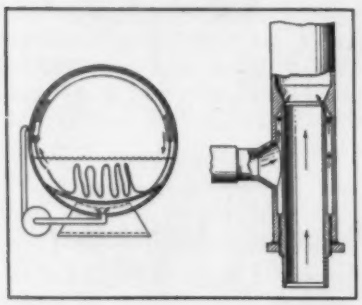
Textile Chemicals

By ROBERT W. PINAULT, Associate Editor, TEXTILE WORLD

An Inside View of the Jet-Dyeing Machine—How New Device Works

The principle of the new jet-dyeing machine (TEXTILE WORLD) April '61 p. 144), built by Gaston County Dyeing Machine Co. under license from Burlington Industries, is easily seen in the cross-sectional line cut below. Essentially a closed dyebeck minus reel and breast roll, the device makes it possible to work goods at high temperatures without loss of heat.

Fabric moves up through a stainless steel tube by pressure of dye liquor, as you can see by examining the cross-sectional view of the tube at the right. A very small circular orifice increases the force of the dye liquor that is pumped into the annular chamber from the main bath contained in the beck.



Faster dyeing, more-level shades, and freedom from crock marks and chafing are claimed for the new invention, patented under U. S. Patent 2,978,291.

Now Redox-potential Can Give Good Results on Batch-Dyeing Jobs, Too

Now you can get good results by applying redox-potential, usually considered to be most valuable in parkage- or continuous-dyeing systems, to jig dyeing.

As a part of investigations into vat dyeing in general, H. Borsten of Fibre Research Institute (Delft, Holland) finds that savings in hydro up to 30% can be made if you apply redox-potential measurements to jig formulas. The Marhen process developed by General Dyestuff Corp. workers some years back forms the basis of the investigation. In addition, conductivity measurements are used to determine alkali content directly—and also hydrosulfite content.

Jig dyeing requires more hydro than package or continuous methods. So a relation between the several factors is set up like this:

1. Surface of the cloth to be dyed (in square centimeters).
2. Number of ends.
3. Amount of dyestuff (in kilograms).
4. Constant, which depends on air circulation at the point of dyeing and the structure of the cloth.

The constant can be determined for various fabrics.

A few redox-potential control measurements applied to this formula come up with entirely satisfactory hydro-caustic ratios that cut costs for hydro 30 to 35%.

New Resin Treatment Helps Abrasion Resistance

A Japanese discovery is claimed to produce good wash-and-wear effects on cottons without appreciable loss of abrasion resistance. The active principle is N-methylol acrylamide, which is applied together with hydrogen peroxide and ammonium chloride as catalysts. Goods can be dried and cured in a one-step operation at 120 C. for 15 minutes.

Tear strength is as good as that produced by older methods, and the finish of the cotton has excellent washfastness.

Imported Fabrics Are Giving Customers Trouble

Poor performance at the drycleaners is giving some types of imported fabrics a black eye with the cleaners and the public alike.

Dr. Dorothy Lyle, speaking for the National Drycleaning Institute as Director of Consumer Relations, cites Italian tweeds in which the black dye bleeds freely in solvents, and knit goods that shrink excessively and are often dyed with dyes of poor lightfastness. Other troubles come from cotton poplin raincoats with a rubber inner coat that pulls away from the fabric if it is drycleaned.

Some knitted fabrics contain heat-sensitive fibers that shrink unduly and produce the effect of dye stains after pressing. Others were found to be a blend of wool and synthetic protein fiber that develops holes when it is drycleaned. Complaints of this nature have risen rapidly since the influx of foreign goods, according to Dr. Lyle.

Ethylene Oxide Condensates Improve Printing Results, German Firm Finds

Man-made-fiber prints come up deeper, more level, and require less steaming time if you modify print pastes according to a method patented by Farbwerke Hoechst, Germany.

Basic change is to add to the print paste up to 10% of an oxyethylation product obtained by reacting one mole of naphthol or phenol with 2 to 4 moles of ethylene oxide. A-naphthol, B-naphthol, or 5:6:7:8-tetrahydro naphthol-2 can be used in various proportions.

The condensate is effective with direct, disperse, basic, acid, vat, or soluble-vat dyes. Some dyes that normally don't work well on acetates respond to this treatment, and blends of wool and man-made fibers come up with more level shades.

Steaming time is also reduced from an hour or more to a few minutes, so continuous processing is possible. Steaming can be replaced in some cases by simple heating to 150 C. for a short time.

Here's how to print acetate:

- 60 parts of thiodiglycol dissolved in 190 parts of water
- 600 parts of thickener based on ½ British gum and ½ Crystal gum
- 70 parts of the condensate made by reacting 1 mole of beta-naphthol and 2 moles of ethylene oxide dissolved in 50 parts of hot water
- 30 parts of disperse dye

After printing you can steam for 30 minutes, rinse and soap, or you can run the printed fabric over a hot (140 C.) surface for 30 seconds. Level shades are thus produced.

Acrilan-type fabrics can be printed in deep blue shades with:

- 30 parts Celliton Fast Violet B
- 30 parts thiodiglycol dissolved in 360 parts hot water
- 500 parts thickener
- 70 parts of the condensate formed from 1 mole of beta-naphthol and 2 moles of ethylene oxide

Heat the printed goods for 20 seconds at 170 C., rinse, soap, and dry as usual.

With vat dyes, the same improved absorption is noted with either printing hydro or thiourea dioxide present as reducing agents.

You Desize and Bleach In Just One Bath

You can combine desizing and bleaching in one operation, according to U.S. Patent 2,974,001. Starch-sized goods are impregnated with an amylolytic desizing compound, sodium chlorite, and an acid-liberating salt all in one bath essentially at pH 7 in this process.

The goods are saturated with the solution at 20 to 60 C. and then let alone for 10 to 60 minutes. After the initial layover, you activate the acid-liberating salt by heating the fabric to 60 C or better for time enough to produce the bleaching effect that you want.

Built-In Bacteriastat Cuts Odor Formation

You can inhibit microbial growth in acetate fabrics by adding organotin compounds to the spinning dope.

Two Japanese chemists find that tetrabenzyl tin, triethyl phenyl tin, or tribenzyl phenyl tin are effective in amounts ranging from 0.05 to 0.15%.

The spinning quality of the treated dope is not affected, and the bacteriastatic qualities remain after 50 launderings.

The modified acetate has been tested against Micrococcus aureous and Bacillus subtilis for bacteria, and Chaetomium globosum for fungi. The tin-containing fiber has no harmful action on human skin. Further details are available from British Patent 862,515.

Fluidized-Bed Drying Cuts Surface-Resin

The Shri Ram Institute for Industrial Research in India finds that fluidized-bed drying of resin-finished goods produces a marked increase in tear strength.

The fluidized bed used for the drying operation is made up of bentonite, china clay, or precipitated chalk—materials that are hydrophilic, not hydrophobic.

The discrete particles of these substances remove the surface-deposited resin, which is responsible for poor abrasion resistance and most of the loss in tear strength.

Curing can be done in a second fluidized bed made up of sand particles of 40 to 60 mesh. In experimental runs, cotton fabrics have been given good crease resistance without loss of strength. Conventional drying and curing of the same resins caused a 24% loss in tear strength.

Dispersing Agents May Hinder Shade Buildup

If you dye ordinary cellulose acetate, pick a dispersing agent that won't slow up dye absorption of the dyes that you are using.

Studies show that in a typical dyebath containing a dispersant, there is a saturation value that generally accords with partition of the dye between the fiber and the dye liquor, proportional to the solubility of the dye in the fiber.

But some disperse dyes that are more hydrophilic because of beta-hydroxyethyl groups in their make-up don't build up well in the presence of certain dispersants.

What happens is that the dispersant is absorbed by the fiber, and the dye tends to remain in solution. The loss in shade depth rises to a maximum when the point of maximum absorption of dispersant is reached. Products that may give this effect are those based on 1-oleyl-4 anisidine-2-sulfonate or disodium methylene-dinaphthenate sulfate.

Paraffin, Metal Alcoholates Produce Good Water Repellent Effects

You can get good water repellency from formulations described in British Patent 835,797 to Boehme Fettchemie, Germany. Formulas are based on application in a solvent such as trichloroethylene but conceivably could be modified to be used in water via emulsification.

The system is based on using 140 F. melting-point paraffin wax plus the condensation product of the alcoholate of a polyvalent metal with an acid-high molecular weight organic ester of phosphoric acid. Most common alcoholate is aluminum, but titanium and zirconium alcoholates are also useful.

You can prepare the condensate by reacting about equi-molar proportions of the alcoholate with an organic ester such as mono-octyl, dodecyl, oleyl, or octyl-phenol ester of phosphoric acid.

A typical treating bath is made up of:

- 5 parts paraffin wax 140 F. melting point
- 10 parts of the condensation product of 1 mole of aluminum iso-propylate with 0.8 mole acid dicetyl phosphate
- 2 parts acetic acid
- 1,000 parts trichloroethylene

Goods are padded and dried. No curing is necessary, and the hand is soft.

Muted Colors Show Less Soil, Studies Confirm

Studies made on the apparent soiling of carpets confirm the lay opinion that light, bright colors show dirt more easily than dark, dull ones. But the color itself has a great deal of effect on the apparent soiling.

Tests with colored corn starch soiled with carbon black pointed up differences brought about by color alone. Here's how they stacked up.

White	1.0 (lowest resistance)
Lemon	3.6
Crushed strawberry	16.0
Claret	9.0
Saxe Blue	33.0
Almond Green	14.0
Silver Gray	6.1
Mineral Blue	70.0
Terra Cotta	14.0

Testers have found that the influence of color on soiling is dependent on depth of color. Shades dulled a little soil even less.

Amide Lubricants Improve Tear Strength in Wash-Wear Finishing

You can use high formaldehyde-melamine ratios to produce wash-and-wear finishes of good tear strength if you include certain amides in the formula.

Trouble with resins that run as much as 6 parts of formaldehyde to 1 part of melamine, for instance, is that although crease resistance is excellent, tear strength is poor on cotton and linen.

Tootal Broadhurst Lee got around this defect by adding to a 6-to-1 resin bath about 2% of a product such as Sapamine WP (Ciba), Phobotex FT (Ciba), or Velan PF (ICI). All of these products are cationic and resist washing out if they are cured in by normal resin-finishing processes.

The 6-to-1 resin is applied as usual and the goods are dried at moderate temperatures, followed by curing at 150 C. for 3 minutes. An afterwashing in soap and soda ash is recommended. Final resin-amide content averages 5%.

TBL claims tear strength is good.

Did You Know

. . . that soap and soft water are best for washing off uncoupled residues of reactive dyes? Anionic detergents, particularly imidazol types, form complexes with unattached reactive dyes that are harder to wash off than the dye residues themselves. Also, any electrolytes present in the soaping bath tend to retard removal of loose color.

■

. . . that the reactive dye Remazol Black B works well on Acrilan? Applied from a strongly acid bath, this dye produces deep blacks with good lightfastness. Most reactives of this type do not have satisfactory fastness to light on Acrilan.

■

. . . that certain phosphates of manganese, sodium, and lithium will protect nylon against the action of sunlight?

Addition of 25 to 100 parts per million of these salts to the welt prior to spinning will do the trick. Listed as useful in British Patent 861,354 are manganous orthophosphate, manganous ammonium orthophosphate, manganous pyrophosphate, manganous potassium pyrophosphate, and sodium or lithium orthophosphate. The salts also inhibit the effect of titanium dioxide, which accelerates sunlight damage.

■

. . . that you can check woolen fabrics for the presence of permanent pleating chemicals? Ammonium thioglycolate (Siroset) can be detected by spraying the goods with a 0.5% solution of sodium introprusside and put in an atmosphere of ammonia. A red-violet stain will develop on treated goods.

■

. . . that reactive dyes confer a small amount of crease resistance to cottons dyed with them? The effect is due to the crosslinking of the dye with cellulose molecules, similar to what happens with a reactant resin.

What's New In Dyes and Chemicals

Stabilized Azoics

Rapidogen Black GG Solution, Rapidogen Black JF Solution, and Rapidogen Black GRW Solution . . . are offered as stabilized azoic compositions suitable for printing blacks on cotton or rayon.

The dyes provide a greenish, bluish, and jet-black range that can be used alone or in combination with other Rapidogen dyes.

Fastness to light, washing, and hot pressing is very satisfactory. The dyes are also resistant to formaldehyde that may be released in curing some pigment colors bound with resins. General Dyestuff Co. **(Circle D-1 on Reader-Service Card)**

Aftertreated Directs

Benzocuprol . . . brands a line of direct aftertreated colors with high lightfastness properties. Wetfastness is comparable to D&D and sulfur dyes. Many of the dyes are dischargeable, and most show little change in shade when they are aftertreated with copper sulfate.

Disperse Dye

Resolin Blue GRL . . . is recommended for the economical production of heavy shades of brown, blue, or black on polyester fibers. Because of its excellent dispersibility, it is especially recommended for package dyeing. The dye has good fastness to light, washing, and sublimation, and can be used in high-temperature dyeing.

Premetalized Dyes

Isolan Brown RLS, Isolan Brown BLS, Isolan Brown RL . . . are characterized by good over-all fastness, level dyeing qualities, and good solubility. The dyes do not change to reddish shades under incandescent light. They are recommended for wool, nylon, and silk.

Brightening Agents

Phorwhite BA . . . works well for cellulosic fibers and its affinity is little affected by temperature or salt content of the dyebath. Optimum effects are achieved at pH 7 to 11, and the brightener works well in combination with peroxide bleaching in becks or package machines. High solubility is advantageous in printing applications.

Phorwhite REW . . . is suggested for use in conjunction with resin finishing and is compatible with zinc-salt catalysts. The product can also be applied by exhaustion methods to polyamide fibers and blends of cellulosic and man-made fibers. Verona Dyestuffs. **(Circle D-2 on Reader-Service Card)**

Polyvinyl Acetate Latex

Resin D-809 . . . is a fine-particle polyvinyl acetate-multipolymer latex. The product does not form a continuous film when emulsions are dried at room temperature. Moderate heat will coalesce the resin. The resultant films have good scrub resistance, water-spotting resistance, and good wet strength and adhesion.

The latex can be blended with straight polyvinyl acetate emulsions. It has uses as a stiffener in nonwoven and woven fabric applications. Shawinigan Resins Corp. **(Circle D-3 on Reader-Service Card)**

Reactive Dyes

Cibacron Blue 2R . . . is claimed to be the most economical of reactive blues. The reddish-blue dye builds up well, has good light and wet fastness, and can be used with resin finishes.

Cibacron Brilliant Red 2GP . . . is suggested for printing and pad-steam applications, as well as for thermofix methods for cotton and wool fabrics.

The shade is a bright yellowish red comparable to naphthols. The color builds up well in printing and can be used with resin finishes, PVC coatings, or for rubberized fabrics. Unfixed dye is easily removed and the fiber-dye linkage is resistant to acids and alkalis. Ciba Co. **(Circle D-4 on Reader-Service Card)**

Yarn Tints

Versatint . . . brands a line of fugitive colors that are easily removed from all textile fibers by normal scouring methods. The tints were developed by Deering Milliken Research Corp. and will be licensed for manufacture by Syn-Chem Corp. **(Circle D-5 on Reader-Service Card)**

Premetalized Dye

Supralan Brown RB-CF . . . is a neutral-dyeing color that produces bright medium brown shades on wool, silk, nylon, acrylic, and modacrylic fibers. The dye has good working qualities and good all-around fastness to light and wet processing. It can be used for apparel, upholstery, and carpetings as a self color or for the production of taupes, tans, and cordovans. General Dyestuff Co. Div., General Aniline & Film Corp. **(Circle D-6 on Reader-Service Card)**

Acid Dye

Benzyl Fast Yellow RLE . . . is a neutral-dyeing acid color that can be applied from acetic acid, ammonium acetate, or neutral baths.

The dye produces bright, slightly reddish-yellow shades on wool, silk, and polyamide fibers. Dyeings may be discharged.

Fastness to light and wet processing is good, and the dye builds up well into level shades. In combination with Benzyl Fast Red 2BL and Alizarine Fast Blue BE plus Univadine W, the dye produces excellent fashion shades on wool. Ciba Co. **(Circle D-7 on Reader-Service Card)**

Adhesive

Rubbafab . . . forms a permanent, flexible bond between fabric and polyurethan foam. The product works well with natural and man-made fibers. It is recommended for domestic fabrics. Rubba, Inc. **(Circle D-8 on Reader-Service Card)**

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dyeing
or printing
PASTELS
and
LIGHT SHADES...

water-soluble vat ester dyes

provide vat-dye permanence with direct application

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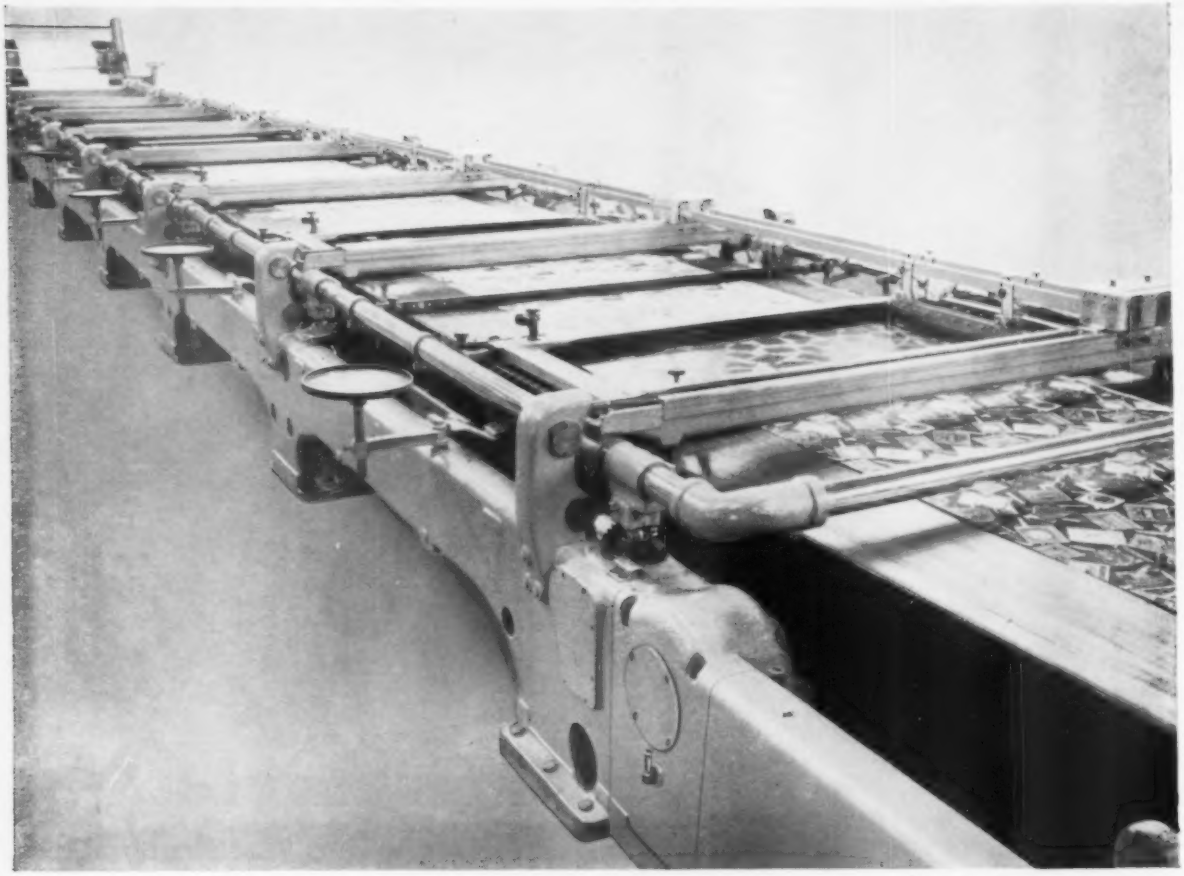

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The Ichinose screen printing machine, with more than 140 patented improvements, screen prints all kinds of fabric perfectly in maximum 21 colors at nearly double the speed of other machines on the market. Finished prints are of highest quality: clean, sharp, accurate and far superior to hand or roller prints.

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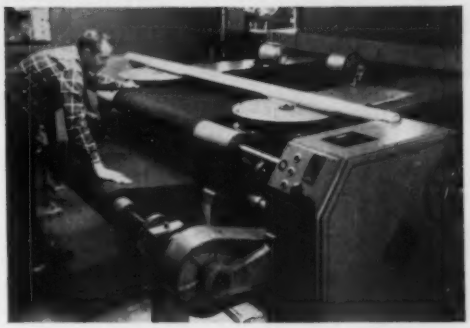
New Bedford, Mass.

one of a series in which we present some facts and express some opinions to help textile chemists solve dyeing and finishing problems

The subject for May

The Case of the Disappearing Dyes

Profit by the experience of this dyer who learned that "economy" polyester dyes cost too much



A major dyehouse in New Jersey was having trouble with a particular polyester/cotton blend. One 10,000 yard lot had already been rejected and several others were questionable. Blacks and grays were on the green side; the blues were too light; yet the Head Dyer was certain the fabrics were on shade after dyeing. What's more, his retained samples proved it.

Heat Causes Color Change

The Head Finisher correctly reasoned the red dyes being used had sublimed during the finishing operation. The resulting decrease in the red component caused the drift to green. The blues also became lighter through dye sublimation. Even worse, the fabrics would probably continue to change color after they reached the consumer because of their poor fastness to dry cleaning and ironing.

Why Not Redye?

Redyeing fabrics containing polyester fibers seldom gives satisfactory results. The heat set given the fabric during finishing to maintain dimensional stability greatly reduces the dyeability of the polyester fibers. And a second trip through the finishing range adversely affects the hand of the fabric.

Enter Eastman

At this point, the dyer called in an Eastman technical representative for help *even though our dyes were not being used.* The Eastman representative observed the dyeing and finishing procedures, examined the fabric, and brought a sample of the greige goods to our nearby Textile Laboratory at Lodi, New Jersey.

A Recommendation

After studying the color changing problem, textile chemists at our laboratory recommended use of a group of superior polyester dyes known for their stability to heat and light: Eastman Polyester Blue GLF, Polyester Yellow W and Polyester Red 2G. Although selected for their outstanding fastness to sublimation and dry cleaning, these dyes also deliver exceptional wash fastness—an important advantage for the end use of the fabric.

A Solution

Dye formulas matching the master swatches were developed and tested for stability in the dyer's finishing range. Then a plant run was made. The results were excellent. The dyer adopted the dyes, and has since processed and delivered many thousands of yards of finished fabric to the complete satisfaction of his customer.

The Moral

Eastman Polyester Dyes plus interested technical assistance by men who have spent years in the field of synthetic textiles are your best insurance against costly redyeing, rejected goods and the attendant risk of losing the account.

Eastman Polyester Dyes

As production of polyester fabrics continues to climb, your customers are going to demand more shades, brighter shades and faster shades. You can meet this demand confidently by relying on Eastman Polyester Dyes.

Developed specifically for use with polyester fibers, these superior dyes are noted for their exceptional fastness to washing, light, sublimation, crocking, perspiration, dry cleaning and wet pressing. Equally important are their excellent processing characteristics: good build-up, good exhaustion, and outstanding leveling properties.

And Technical Service, Too

Included with every pound of Eastman Polyester Dyes you buy are the technical resources and extensive experience of a pioneer in fabrics and dyes. Our facilities and knowledge are freely available to help you get the most effective use out of this outstanding line of dyes.

THE PRODUCT FOR MAY

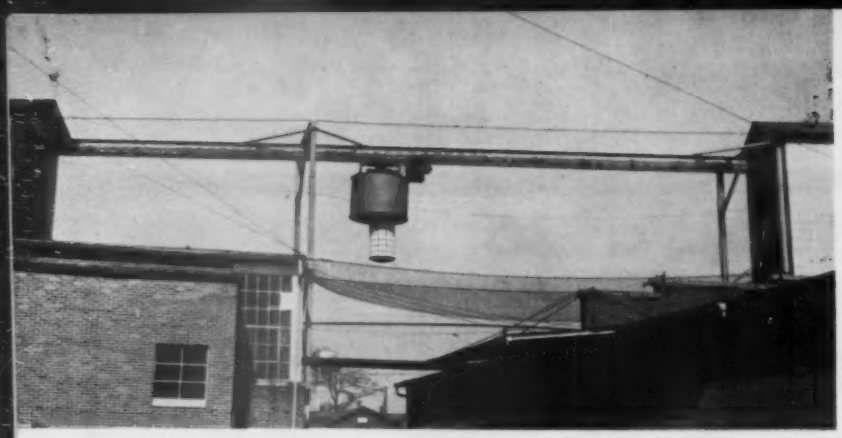
Eastman Polyester Dyes

providing the best all-around fastness characteristics currently available

Polyester Yellow 5GLS	Polyester Blue GLF
Polyester Yellow RL	Polyester Blue GR
Polyester Yellow W	Polyester Brilliant Blue 2RL
Polyester Yellow 5R	
Polyester Red B	Polyester Blue 3RL
Polyester Red 2G	Polyester Blue BLF
Polyester Dark Red FL	Polyester Blue GB
Polyester Pink RL	Polyester Navy G
Polyester Pink LB	Polyester Violet R
Polyester Brilliant Orange 2RL	Polyester Brown 3RL
	Polyester Black RB

Polyester Diazo Black B

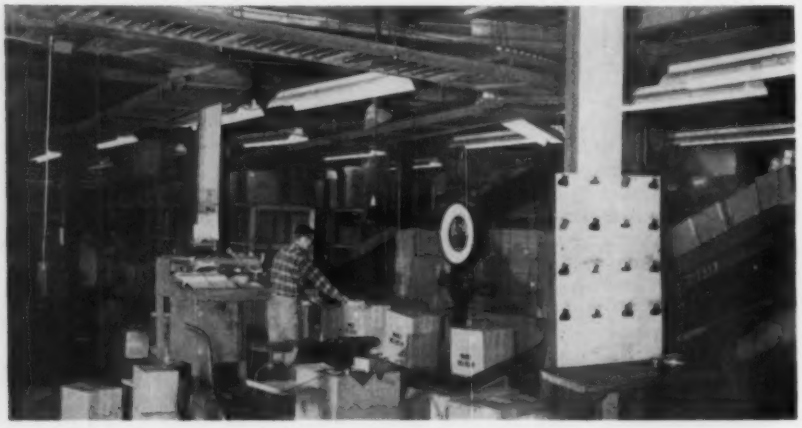
Eastman Polyester Dyes are sold in the United States by Eastman Chemical Products, Inc., subsidiary of Eastman Kodak Company, in Kingsport, Tennessee; Lodi, New Jersey; Greensboro, North Carolina; and Providence, Rhode Island. On the West Coast through Wilson & Geo. Meyer & Company, San Francisco, Los Angeles, Portland, Seattle, Salt Lake City. In Canada through Clough Dyestuff Co., Ltd., St. Laurent, P. Q.



TRANSPORTING loaded yarn carriers, this time-saving monorail speeds carriers from receiving department (right) to dyehouse. Net under roadway is a safety feature—just in case.

MOVING out of dyehouse through the penthouse structure on the top is a loaded carrier.

MOVING finished packages begins at this point on this special conveyor system. Powered belt moves cartons.



SHIPPING room is dependent on this complex of roller conveyors that expedite weighing, sorting, and sealing. Overhead conveyors hold winding room production until it's needed.

'61 modernization

CHEMICAL TREATMENT & FINISHING

Cutting Finishing

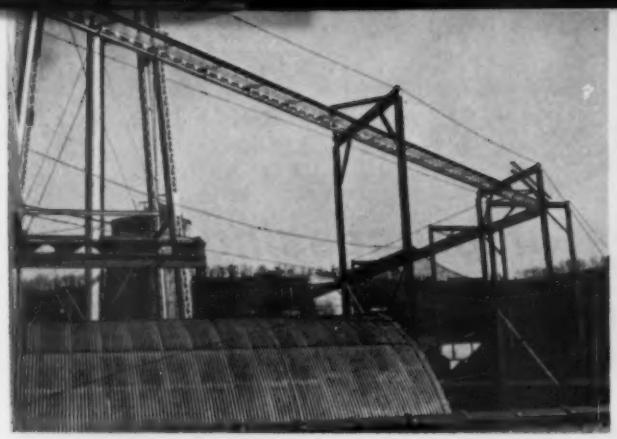
YOU SAW how Standard-Coosa-Thatcher's broad-gage modernization program is reshaping the spinning operations of the company (page 68). Now here's how that program is speeding S-C-T's dyeing and finishing operations, keeping costs down to a minimum.

S-C-T dyes and finishes an average of 135,000 pounds of cotton yarns per week at its Rossville, Ga., dyehouse. To simplify the handling of the thousands of packages that make up this output, management hit on the idea of loading yarn carriers for the package machines right in the receiving warehouse (photo). Next step: transport carriers by overhead conveyor to the dyehouse, which is in another building. Final step: Dyed yarn returns to the receiving warehouse where the carriers unload and are released for reuse.

Two big advantages of this new system: First, there's a minimum of yarn handling—no labor is required to get yarn from the warehouse to the dyehouse and back. Second, there's much more working space on the dyehouse floor because cartons, empty carriers, and carriers being loaded and unloaded have disappeared from the scene.

In the past year, the monorail—which originally ran about 125 feet—has been extended to serve the new bleach house. It also passes over the winding department. Cost of the extended system was about $45,000. In the near future, deck houses will be built on the winding-room roof to cover the openings through which trucks of finished yarn will be delivered to the winding room floor. Almost all hand-trucking will then be a thing of the past. Today, conveyors have taken over almost all trucking problems of getting finished packages to the shipping department, to storage, and to the immediate-delivery areas.

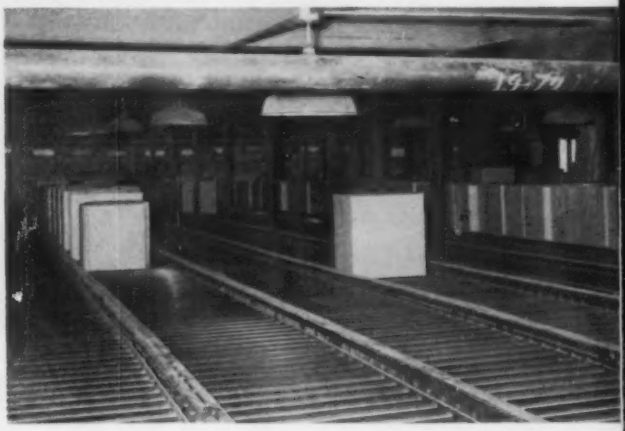
A belt conveyor that runs the length of the winding room transports cases of finished packages to the warehouse via a second belt that lifts the cartons to provide gravity feed. Storage space for three shifts of winder-room production is provided for on the roller conveyors



PASSING over winding department (just beyond bend in rail), monorail heads from receiving department to dyehouse. Dyed yarn will then be lowered through hatches to winding.

BLEACHING in this light, airy, roomy bleach house is fast work. Department has room for several more machines. Yarn is delivered by motorveyor running on the monorail.

DELIVERING goods to storage or trucking stations, according to whatever order is received, this conveyor assures smooth rapid completion of orders.



ASSEMBLING the day's orders: Individual conveyors are marked with appropriate signs so that order gets into right trucks—speedily.

Costs by Modernization

that receive cartons from the winding department.

This pool of material is easily worked up by the shipping room staff in a one-shift operation.

Cartons of finished yarn are delivered from the storage pool to a weighing station where they are weighed, ticketed, and sealed. Reference to the order indicates the next step, and the cartons are shunted to storage or to a series of roller conveyors that terminate at the truck-loading platform.

The storage pool is so set that part orders can be shunted aside until the balance of cartons needed to fill the order comes through. This feature alone saves money in transportation costs because it is usually possible to invoice at better than minimum weights to take advantage of the lower freight rates.

Besides these intramural transportation improvements, Standard-Coosa-Thatcher has just put into operation a new $300,000-yarn bleaching department housed in a new two-story building that is adjacent to the old dyehouse.

Equipment here is four 750-lb. Gaston County machines and an Avesta dryer. The dyeing machines are set up as twin pairs. Stainless steel, able to stand the corrosive effects of hypochlorite bleaching, is used throughout for the bleaching kiers and auxiliary tanks.

Both peroxide and sodium hypochlorite are used for bleaching.

BLEACHING EXPERTLY

Sewing threads are bleached with hypochlorite. Knitting and weaving yarns are given a peroxide bleach.

The new building is of course connected by the monorail system to the dyehouse and receiving warehouse.

In the dyehouse proper, a new Avesta dryer and two twin 600-lb. Gaston County machines have been installed, as well as three twin 300-lb. units of the same make.

Another Avesta dryer and an 8-port dryer make up the basic drying equipment. Total plant and equipment costs for the finishing operations have exceeded $900,000.

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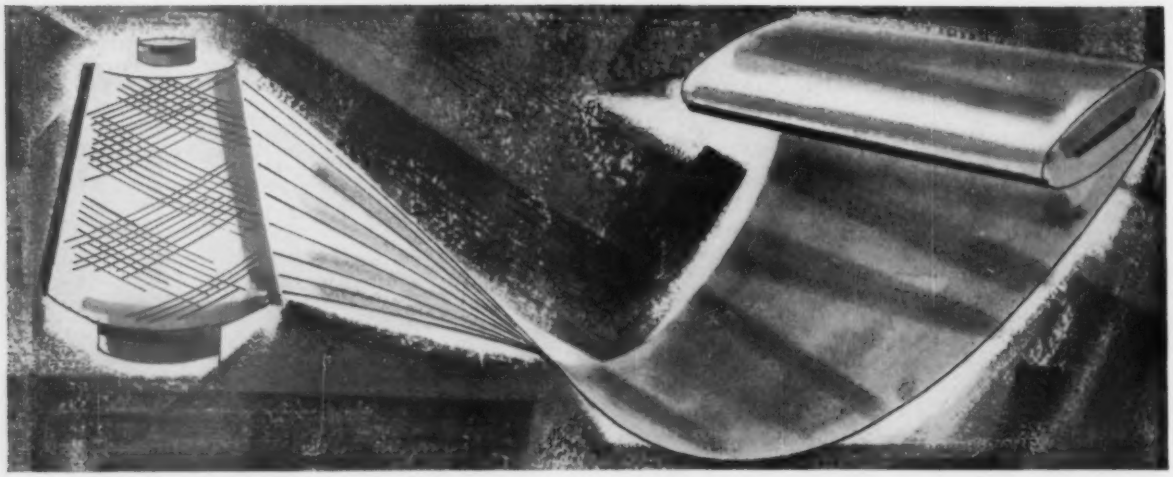

from fiber lubricants to fabric finishing

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NOPCOTEX® SOFTENERS

The knowledge amassed by Nopco in the application of fiber lubricants has made possible the development of a complete line of softeners . . . designated Nopcotex.

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BLANCOPHOR optical brighteners bring you to "on target" as to results. The reliability of these products and the wide range in which they are offered allow you to meet just about every specification of substantivity, solubility, and hue of fluorescence. Consult the chart below to select the Blancophor products that are most promising for your purposes. Then check the coupon and forward it to General Dyestuff Company for prompt service on samples and literature.

For bright whites and sparkling pastels.

BLANCOPHOR® BRIGHTENERS

BLANCOPHOR PRODUCT	SUBSTANTIVITY		SOLUBILITY IN WATER (unless otherwise indicated)	DAYLIGHT HUE greenest hue = 1 pinkest hue = 5	DYEING TEMPERATURE (pH 7)	EXHAUST RATE	LEVELING
	cotton rayon other cellulosics	nylon wool acetate rayon acrylics					
AW (powder)		+	1% in H_2SO_4	5	130°F*	Fast	Good
CB-32 (liquid)	+		15%	1	70-130°F	Moderate	Excellent
FFG (powder)		+	1%	5	130°F*	Fast	Good
GS-33 (liquid)			15%	3	70-130°F	Moderate to Fast	Very Good
HS-31 (liquid)	+		15%	4	70-130°F	Moderate	Excellent
HS-71 (powder)	+		15%	4	70-130°F	Moderate	Excellent
MS-31 (liquid)	+		10%	2	70-130°F	Fast	Good
MS-72 (powder)	+		10%	2	70-130°F	Fast	Good

*Acrylics require a dyeing temperature of 180-200°F.

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Blancophor brighteners manufactured by General Aniline & Film Corporation are sold outside the United States, by distributors all over the world, under the trademark "Tintofen.®"

COMPACT TEAM managing Kenyon's operations is made up of General Manager Bill Timperley (left) and Vice President David Curtis.

'61 modernization

CHEMICAL TREATMENT & FINISHING

Modernizing Step by Step

Just as soon as new machinery and equipment become available, this dyeing and finishing plant puts them to work. Result: continuous modernization throughout the plant.

MANY MILLS put off modernization until the last minute. Not this one. This compact plant seeks out new machines like those in the photos above and puts them to work.

This is the 25-year-old Kenyon Piece Dye Works, Inc., Kenyon, R. I.—a firm that has stuck consistently with dyeing and finishing of man-made-fiber fabrics. But as the man-made fibers evolved from rayon to acetate to polyamides, polyesters, and triacetates, Kenyon has bought the machinery and developed the methods to cope with anything that has come along.

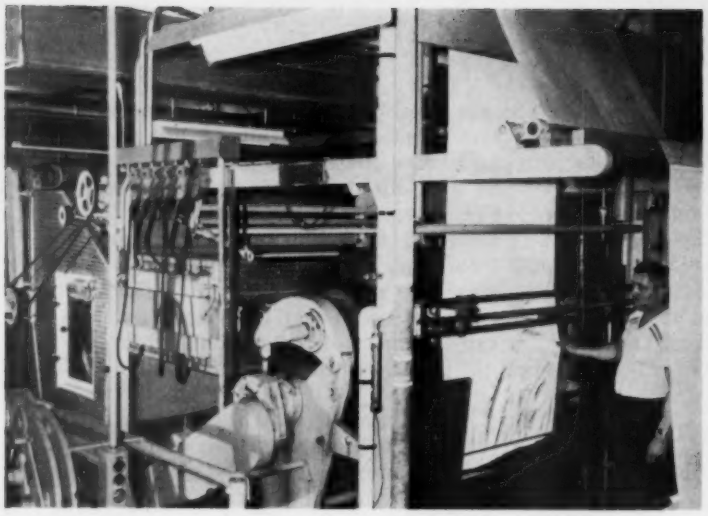
Even back in 1939 Kenyon boasted 16 of the latest type jigs plus necessary drying and calendering equipment. This was the setup for dyeing and finishing of the rayon, rayon and acetate, and all-acetate linings on which Kenyon built its reputation. The plant then covered about 150,000 square feet. Today it covers 3 times as much space.

During the war years, business increased and Kenyon added new lines. As President-Treasurer Raymond Curtis puts it: "We had to tackle new fabrics from man-made fibers. Otherwise we would have probably continued to compete in the lining field, which already had overproduction. And we wouldn't have grown," he adds, "without diversification."

The few jigs that served Kenyon's needs in 1939 have grown to a complement of 52 machines. Most of these have movable stainless-steel covers, necessary to keeping high, even temperatures for man-made-fiber dyeing.

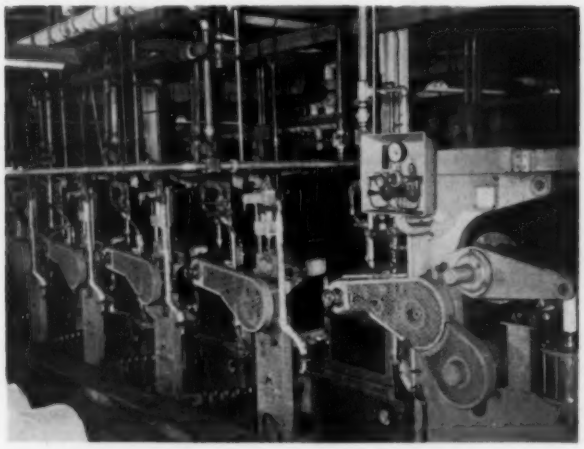
SPENDING TO GROW

But more jigs are only half the story. As Kenyon moved from rayon and acetate into nylon, Dacron, triacetate, and blends of these fibers with cotton, the need for new machines on which to dye and finish



PAD-ROLL MACHINE (made in Sweden) is ideal for processing medium-size lots. Plant has four reactant chambers for this unit.

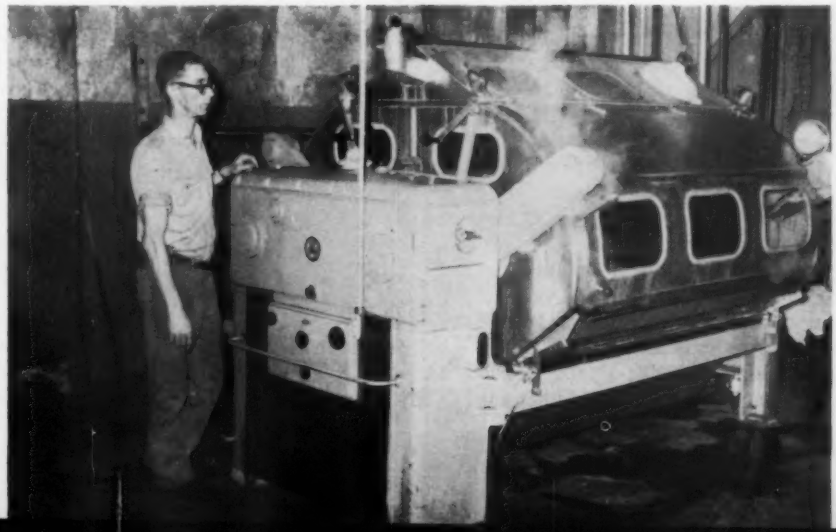
LABORATORY assures success of the pad-roll process. Here, formulas are developed and converted to full-scale.



WASHER—Svetema model—does the most washing in the least space. Compact wash boxes are divided into five sections each.

TEST EQUIPMENT like this air-permeability equipment assures high quality at Kenyon.

JIG—a Vald Hendriksen unit—permits handling delicate, high-priced lines. Tension can be kept at next to zero, speed is constant within about 2%.



them was apparent. In the past 18 months alone, Kenyon has spent $250,000 to modernize and improve its plant. About $95,000 went to plant construction and $155,000 to new equipment.

For a relatively small independent operation, that's big money. Yet the willingness to spend out of earnings systematically and consistently is characteristic of this plant's business philosophy.

Kenyon keeps an eye peeled for new machines, and doesn't hesitate to buy on a world-wide basis if a foreign development fits its need. Improvements in existing machinery are going on, too. Tenter housings have been converted to gas heat to speed drying and provide adequate heat for curing or heat-setting.

A Burlington open-width, pressure-drying machine is useful for blends that include polyester fibers. A new Andrews & Goodrich loop curer eliminates tension and helps stabilize man-made-fiber fabrics.

One of the early Barotors has been reworked to make loading easier. And wherever they are needed, controlling and recording instruments monitor process to eliminate human error.

MOVING A RIVER

Kenyon's most recent plant expansion has been a 30,000-sq.-ft. addition to the dyehouse. Cramped between highways and the Pawcatuck river, the mill had no available land in any direction except across the river. So the stream was diverted to make room for the dyehouse.

The new building houses Kenyon's newest machinery. There is space for another counter-flow washer due this month, and the Montforts reactor.

In the past year Kenyon added 4,000 square feet of warehouse space to take care of the increased amount of gray and finished goods.

Kenyon's physical plant has about reached the practical limit of expansion. Further additions would require a separate building, and this doesn't look like a good idea to management. Instead of increasing floor space, Kenyon strives to extract the most possible yardage from the 450,000 square feet the plant now occupies.

Evidence of good utilization of space is everywhere. Kenyon probably has less waste than any dyehouse in the country. But it's been done without clutter. Coupled with good housekeeeping, the plant can put out a million yards a week.

PACING A TREND

Kenyon's lot is cast with man-made fibres; first with 100% filament goods and more lately with blends of man-mades with cotton. To quote David Curtis, vice president and secretary, "We think that blends will dominate the apparel field in a few years. One-fiber fabrics will become less important except for uses in which they are superior."

It is this conviction as to the growing importance of blends that keeps Kenyon on the lookout for new processes and better machines that will do a better job and do it more quickly in available space.

When asked why Kenyon bought the Vald Henriksen jig, David Curtis said: "It is being evaluated to handle higher-priced lines than we can put through our other jigs." That's the key to Kenyon's business philosophy—if you see there's business and better profit in a coming line of goods, get set for it. If existing machinery can't do the job, find a machine that will.

Kenyon scans the world for that right machine, buys only after careful deliberation, and takes the calculated risk that the decision will pay off.

What's the batting average for this kind of thinking? For Kenyon it's been in the close to the 1,000 range. In the past 15 years, Kenyon doubled its size, doubled its customers, and has put nearly 200 more people to work. Employment is now right around 500.

EXPANDING LINES

The first break from body linings came early in World War II when Kenyan began to process nylon fabrics for cargo chutes, mine and flare chutes, and eventually human escape chutes. At this time, Kenyon is the largest finisher of human escape chutes.

Nylon satin flight suits are also made from Kenyon-finished fabrics. The next new line was fabrics for the corset and bra manufacturers. The latest Kenyon fabric is Antron, which will be featured in outerwear clothes.

One of the most successful fabrics to be processed at Kenyon is an Arnel outerwear fabric similar to a sharkskin but with a spun-yarn filling.

Nylon is responsible for the greater part of Kenyon's yardage today, with Dacron coming up steadily. Dacron-cotton blends are an important factor, too. Top these with sail cloths of nylon (for spinnakers) and Dacron (for mainsails) and flag cloths. Add Milium finishes for high-count linings and a small printing operation and you get some idea of the types of work that have kept Kenyon busy and growing.

MODERNIZING METHODS

Modernizing is not confined, by any means, to new machines at Kenyon. As the demand for faster colors, better dimensional stability, and durable finishes has increased, the plant has developed means of producing these qualities. Kenyon's laboratory sees that quality control is not an idle term.

Kenyon pioneered in gas-fast acetate linings, stabilized rayon linings, and more recently it has gone into production of rayon lining suitable for wash-and-wear suitings.

In its 25-year history, Kenyon has proved that you can succeed in the dyeing and finishing industry and that one way to do it is to stay on top of developments in new machines and methods as they come along.

And another important point is that Kenyon has been willing to invest any surplus in the plant. Back of all this is President Raymond Curtis's business philosophy that you can get profitable business if you turn out a quality product—in an efficient way.

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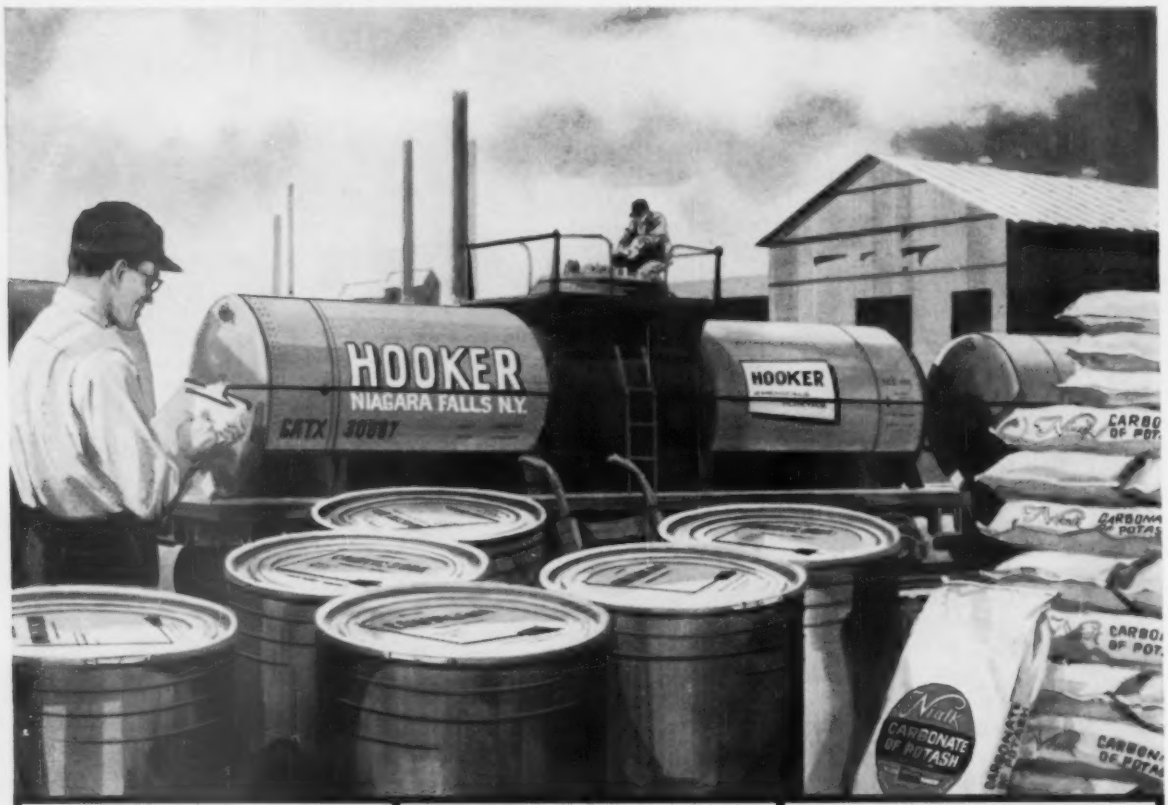

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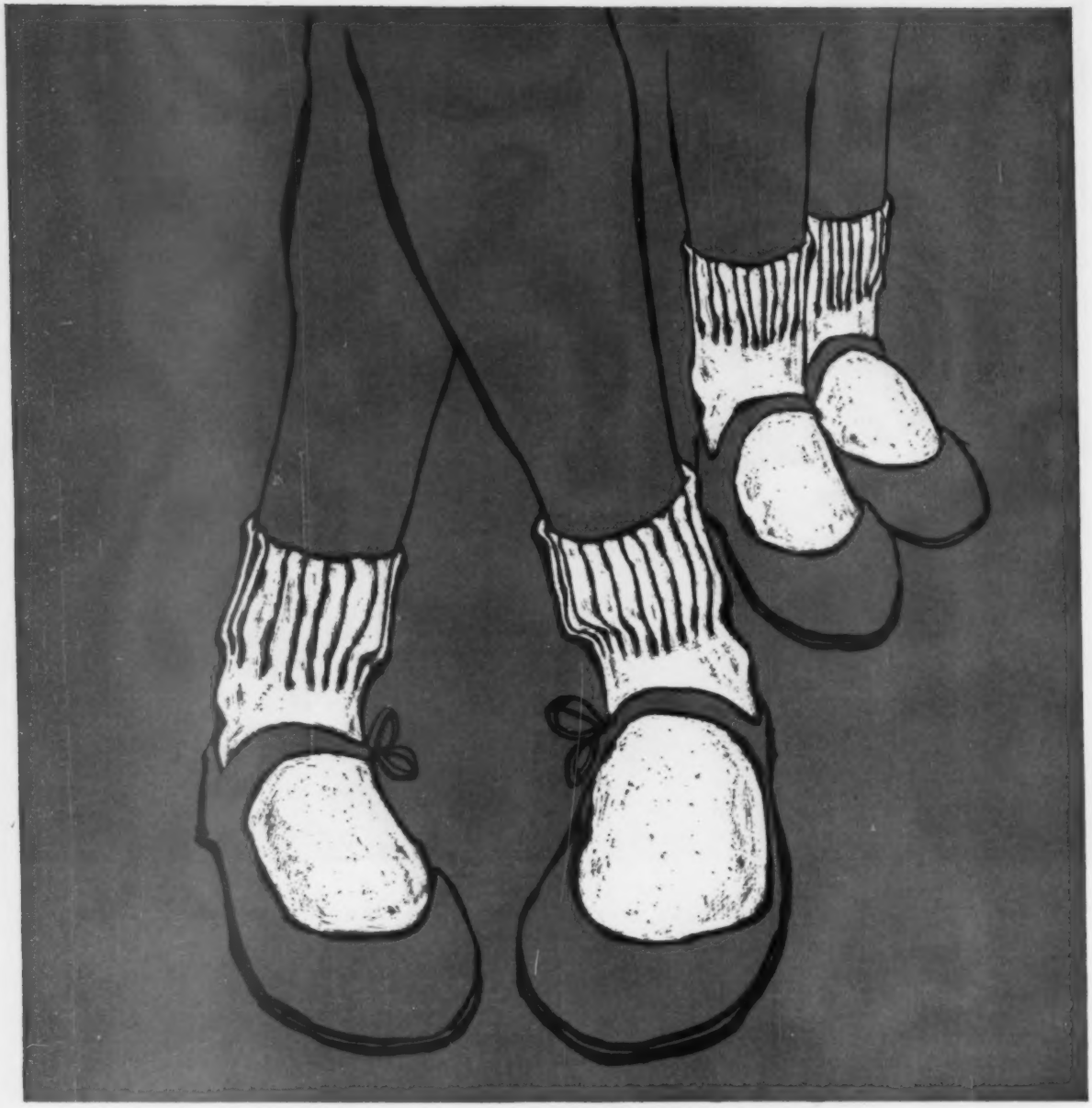

NEW COLUMBIA-SOUTHERN H_2O_2 BLEACHING PROCESS SAVES TIME AND SUPPLIES ON COTTON HOSIERY

Barberton, Ohio—Research into improved applications for Columbia-Southern Hydrogen Peroxide is paying off for many hosiery mills in sharply reduced bleaching time and lower cost of supplies. Full-white bleached goods are being produced at lower total costs and with higher finished strengths, in just one hour compared to former cycles up to five hours.

Best of all, mills find they can put the Columbia-Southern process right to work in existing equipment without additional expense or delay.

Because each company has its own set of conditions—water, amount of soil in goods before scouring, equipment and workload—we invite you to call in your PPG-Chemical Division representative. He can make specific recommendations to help you save time and money. Of course, he's also ready and qualified to give expert guidance on shipment, storage and handling of such textile processing chemicals as hydrogen peroxide, soda ash, caustic soda and chlorine.

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Make it wash-and-*wearable!* POLYEEN FINISH ... soft and resilient to the touch.

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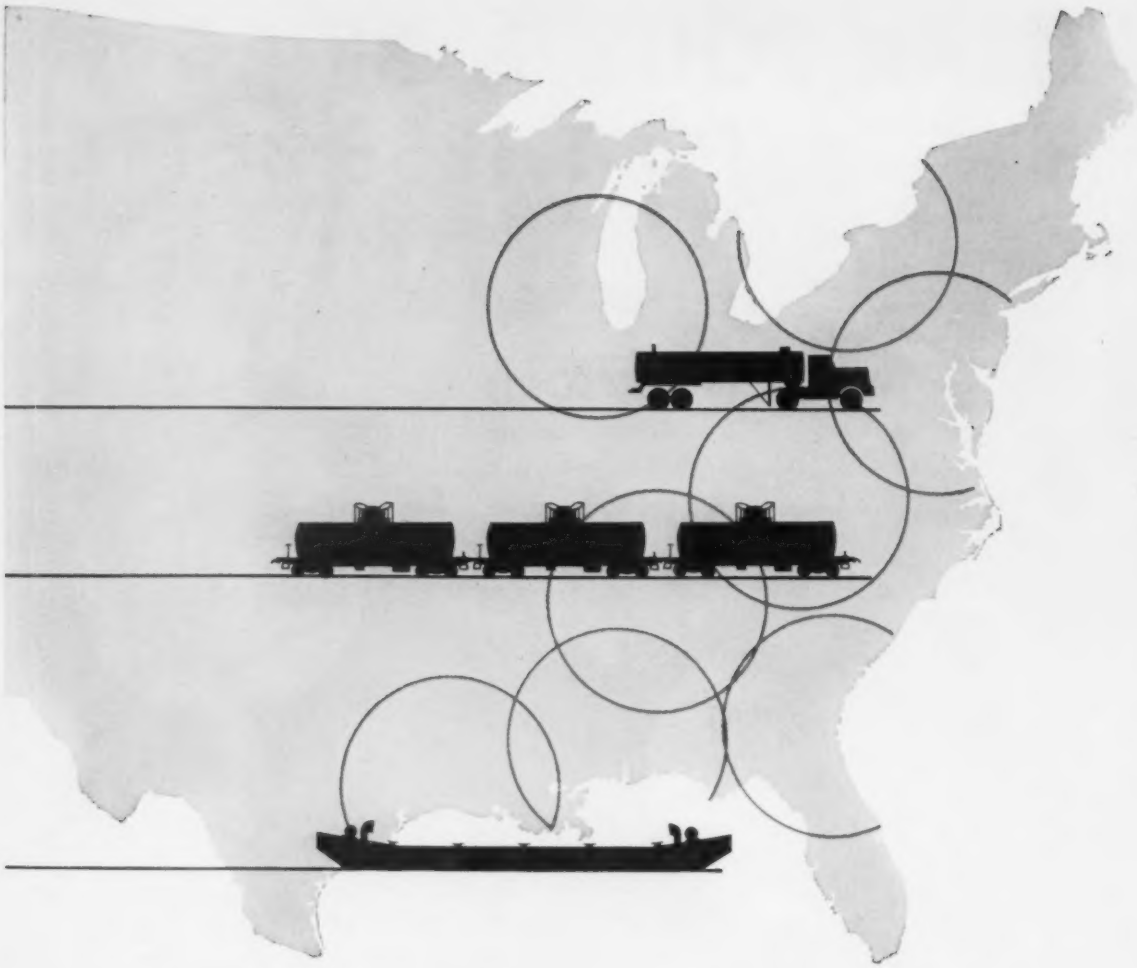

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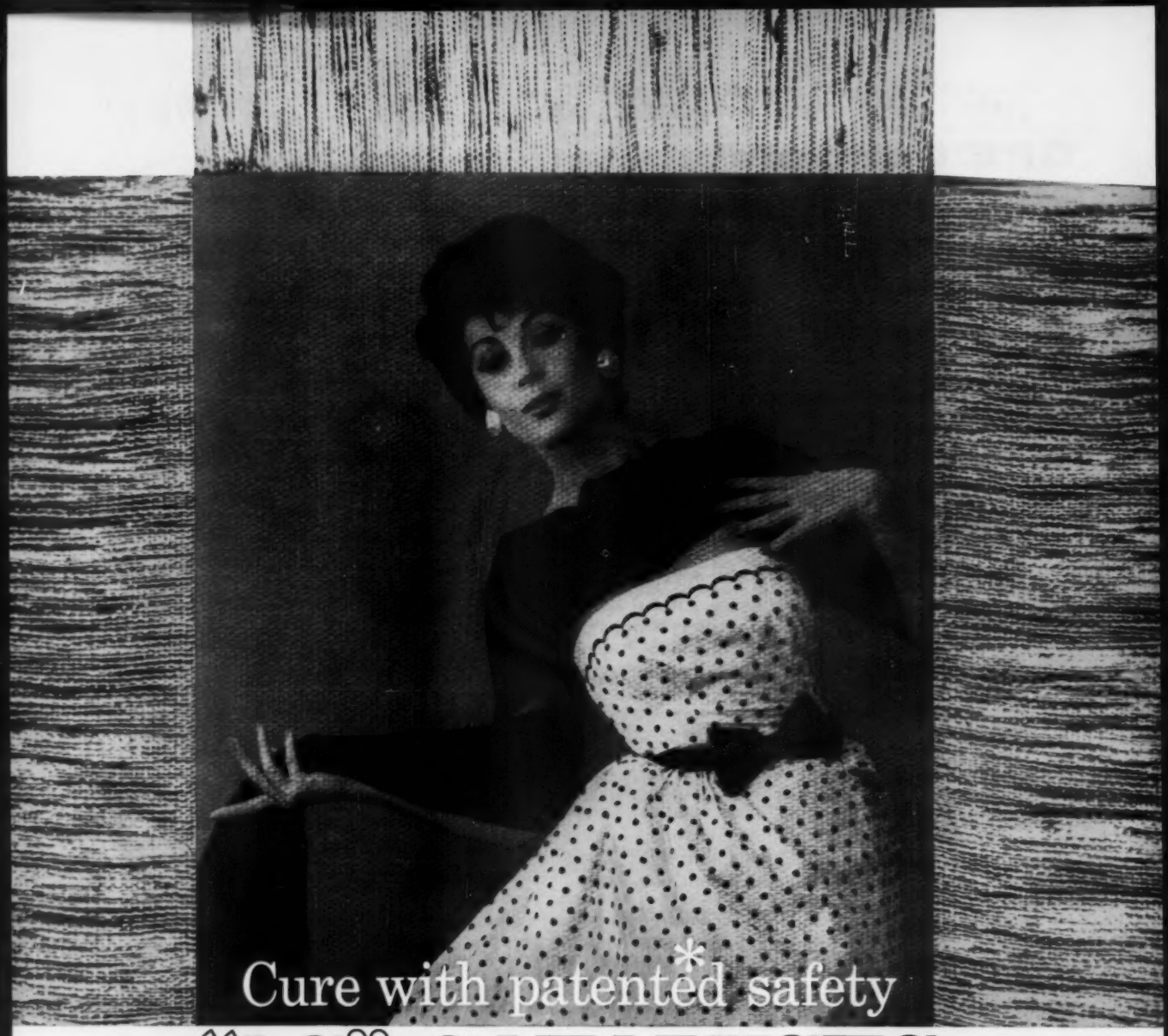

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*Monsanto is the owner of U.S. Patent No. 2,467,160 covering compositions of acid curing aminoplasts with a hydroxy amine salt as a latent curing catalyst.

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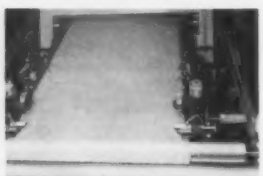
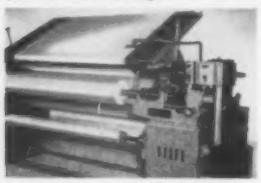


Medium-duty double unit with air sensing, positioning rails on tenter frame for higher speeds.

Photoelectric reflected light head senses cloth position by following printed line or selvage.



Light-duty unit with air sensing, applied to examining machine. Similar unit is used in tubing operation.

- ★ Highest-speed tentering with minimum selvage and no mis-pinning.
- ★ Speed up printing operations while you keep accurate side register.
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- ★ Light-weight or open-weave materials, such as lace, scrim, and gauze, are easily guided, as well as heavy materials such as carpeting and canvas.
- ★ Can be set to guide on the nap of carpeting, velvets, and other high-pile materials.
- ★ Cloth edge position, porosity, opacity, or reflectance sensed by air or photoelectric heads.
- ★ Slit without side trim!
- ★ Hydraulic actuation for unlimited power and speed, high frequency response.
- ★ Engineered for the textile industry by specialists in industrial automatic controls. Designed for long life and minimum maintenance.

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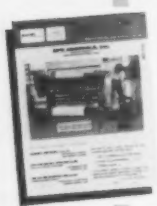

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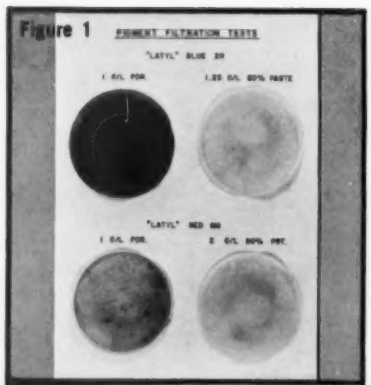
ANNOUNCING 11 NEW "LATYL"* DISPERSE PASTES!!



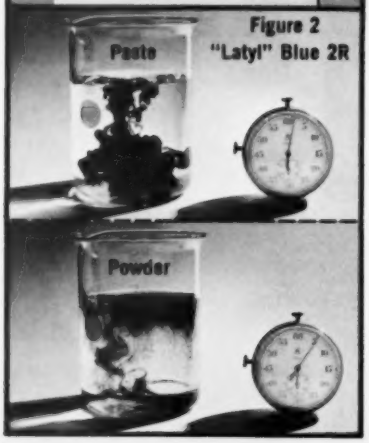


Figure 2
"Latyl" Blue 2R

A number of "Latyl" disperse dyes are now available from Du Pont in paste form and provide the dyer with a simpler route to the production of speck-free paddings on "Dacron"* polyester fiber. "Latyl" pastes are aqueous dispersions of the familiar "Latyl" powders and offer the following advantages over parent powder types: freedom from dusting, ease of preparing concentrated pad-baths in short volume, excellent redispersibility, finer particle size, improved nonspecking properties.

Currently available "Latyl" pastes will produce most commercial shades. Other "Latyl" dyes are being prepared in paste form and will be available within the next few months. Those announced to date include:

"Latyl" Yellow 3G 80% Paste
"Latyl" Yellow RC 50% Paste
"Latyl" Orange NST 50% Paste
"Latyl" Brown MS 50% Paste
"Latyl" Red MG 80% Paste
"Latyl" Bordeaux B 80% Paste
"Latyl" Blue BCN 80% Paste
"Latyl" Blue LS 80% Paste
"Latyl" Blue 2R 80% Paste
"Latyl" Blue 4R 80% Paste
"Latyl" Brilliant Blue BG 80% Paste

These dyes were selected to provide a range fast to sublimation for application by the Du Pont Thermosol Process.

Extensive laboratory and mill testing has confirmed the effectiveness of the highly dispersed "Latyl" pastes. The small particle size is readily illustrated by comparing the filtrations of water dispersions of the powder type versus the corresponding paste type.

All of the "Latyl" pastes are completely and readily miscible with water. Preparation of water-based pad liquors and other short-volume aqueous dyeing media can be accomplished with greater ease since prepasting of dye with dispersing agent is eliminated. "Latyl" pastes diffuse throughout the liquor in seconds. Figure 2 shows the extremely rapid dispersion of a "Latyl" paste in water versus the comparable powder product.

If a "Latyl" paste should dry out it can be completely redispersed without noticeable loss of its outstanding nonspecking characteristics. A "Latyl" paste which has dried out will wet out immediately when water is added and can be readily stirred into an excellent dispersion for padding or dyeing. Also, if the paste should dry on the sides of the container and fall back into the dispersion, the dried portion can be quickly redispersed with slight stirring.

"Latyl" pastes were developed to achieve freedom from specking in pad application of disperse dyes to "Dacron" polyester fiber.

Dyes such as "Latyl" Blue 4R 80% Paste and "Latyl" Blue 2R 80% Paste can be padded in light to pastel shades without danger of specking during Thermosol development. Therefore, a dyer has a wider range of dyes for shading purposes.

"Latyl" disperse pastes represent another Du Pont technical service to the trade. These products should contribute toward improved quality of dyeing and printing and at the same time reduce costs through reductions in processing times. "Latyl" pastes are of particular value for any application where padding is concerned, such as in the Du Pont Thermosol Process. They are also recommended for use in circulating machines for dyeing packages, stock, top, tow and in beam machines. Handling convenience and freedom from specking provide definite advantages that should be of interest to the textile printing industry.

Note: This information, based upon our testing and experience, is offered without charge as part of our service to customers. It is intended for use by persons having technical skill, at their own discretion and risk. We do not guarantee favorable results, and we assume no liability in connection with its use. This information is not intended as a license to operate under, or a recommendation to infringe, any patent of Du Pont or others covering any material or use.

*"Dacron" and "Latyl" are registered trademarks of E. I. du Pont de Nemours & Co. (Inc.), Wilmington, Del.

news from Du Pont

NEW TECHNICAL BULLETIN AVAILABLE

A new technical bulletin, *Disperse Dyes for "Dacron" Polyester Fiber and Its Blends*, is now available free. For your copy, just write E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Division, N-8516-1, Wilmington 98, Delaware.

NEW "DEKATYL" VIOLET B

FOR DEEP SHADES ON "DACRON"

"Dekatyl"* Violet B is a new type cationic dye recommended for producing deep shades on "Dacron"* types 62 and 64 polyester fiber and on other fibers with affinity for cationic dyes. This new dye exhibits outstanding fastness to light and good fastness to wet processing. "Dekatyl" Violet B should be especially useful in piece dyeing blends or mixtures of "Dacron" types 64 and 62 with other fibers such as wool and the 50 series "Dacron".

Certain precautionary measures are necessary for obtaining level, well-penetrated dyeings with this dye; specific procedures can be supplied by a Du Pont technical representative.

FASTNESS PROPERTIES

On "Dacron" Type 64 with "Latyl"* Carrier A Present

Light (Fade-Ometer)	Rating	Direction of Fade
4.0% Control	6-7	M
8.0% Control	7-8	M
4.0% Heat-treated 1 min. at 400° F.	7-8	M
8.0% Heat-treated 1 min. at 400° F.	7-8	M

4.0% Dyeing on "Dacron" Type 64

	SC	A	C	D	N	R	S	W
Crocking (dry)			3					
Crocking (wet)			3					
Drycleaning ("Perclene"*) (85-60)	5-4D							
Gas-Fume Fading (3 cycles)	5-4R							
Perspiration (acid)	5-4D	5-4	5-4	—	5-4	4	4-3	5
Perspiration (alkaline)	4D	5	5-4	—	5-4	5-4	4	5
Pressing (hot dry) (1 min., 320° F.)	5-4D	—	5	5				
Pressing (hot moist) (CS 59-44)	5-4R	5	5	—	5	5	5	5
Sea Water	4D	5	5	—	5	5	4	5
Steaming (15 lbs., 30 min.)	4-3RD	5	5	—	5	5	5	5
Sublimation (dry steam, 20 min.)	4D	5	—					
Washing AATCC #3	4R	5-4	5-4	—	4	5-4	4	4
Washing AATCC #3A	4R	5-4	4	—	2	5-4	2	4

For more detailed information, see your Du Pont representative.

news from Du Pont

NEW "PONSOL"* BROWN WAB PASTE AVAILABLE FOR VAT APPLICATION

"Ponsol" Brown WAB Paste is a very economical anthraquinone vat brown. It yields bright shades and is suitable for almost all types of vat dye application.

"Ponsol" Brown WAB Paste has good working properties when reduced and dyed at 120° F. on packages and beams. This dye is not recommended for high temperature work since it becomes much weaker and duller in shade at 180° to 190° F.

"Ponsol" Brown WAB Paste produces speck-free paddings, is satisfactory for use by the vat-acid procedure, shows good uniformity in shade and strength on packages and can be printed in light shades.

FASTNESS PROPERTIES

Light (Fade-Ometer)	Rating	Direction of Fade
2.0 oz./gal. on cotton piece goods	3-4	M
4.0 oz./gal. on cotton piece goods	4	M
8.0 oz./gal. on cotton piece goods	4-5	M
16.0 oz./gal. on cotton piece goods	5-6	M

For more information, see your Du Pont representative.

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TEXTILE WORLD . . . Pointers for Supervisors

Figuring When to Modernize

Modernization is a task that requires full teamwork on all levels of management. That's why you'll find this short checklist helpful in acting as management's first outpost in spotting modernization projects.

MODERNIZING is a costly business—one that takes the talents of every member of the management team to make it pay off in the most effective ways. That's why you as a supervisor have a peculiar responsibility in alerting your management to opportunities for modernizing equipment, layout, and handling procedures.

You may wonder if it is time to replace a certain unit, or whether or not the machine will keep on doing its job for another year. This is your starting place.

What then? A long job of computing costs almost always comes next, for that is really what modernization is all about—reducing costs. Initial cost, as you well know, is often stressed too much. That's why it's important to compute depreciation and maintenance costs, and to keep technological improvement in mind too.

Whether your organization replaces machines according to a definite program or only when some question of their utility to the mill arises, it's necessary to develop some plan of investigation.

In the paragraphs that follow you'll find a checklist that will help you check technical suitability, cost-cutting potential, and potential productivity increases.

Place to start: Evaluate the technical operating characteristics of the units you now have. What are their limitations? What's wrong with them? Balance your findings—point by point—against the performance abilities of the unit under consideration as a replacement. You can follow a check-off scheme similar to this:

By ERNEST W. FAIR
Business Consultant
Boulder, Colorado

TECHNICAL POINTS

The usual outstanding factor in new equipment—the thing that gives such equipment a wide lead over existing equipment—is its capacity to boost output markedly at lower unit cost. Generally speaking, maintenance costs of newer equipment should be lower than that of older machinery.

You'll probably find that the points to consider from the technical standpoint and those from the cost viewpoint will be fairly even in your estimation. But in today's highly competitive textile industry, it's important that you give closer scrutiny to technical factors first. Increased machine ability means less skilled labor in its operation.

. . . *Is present equipment worn out?* An affirmative answer to this question means that you have to decide whether or not repair or rebuilding costs will be greater than replacement of each unit when all other considerations are even.

. . . *Is the present unit obsolete?* This is of the utmost importance today. Obsolete equipment is always a drag on any mill operation. In locations possessing highly competitive conditions, obsolescence of even the smallest unit of equipment makes business operation more costly and difficult. Obsolete units add to the cost of doing business.

REPAIR COSTS

How many man-hours have you spent keeping the equipment under your control in top operating condition? This is an important consideration in any assessment of new equipment vs. old. What do your department records show? Have you discussed the problem with the employees in your department so that they are conscious of weaknesses—are willing to bring these weaknesses to your attention?

Chances are an old machine requiring a great deal of repair work can be replaced with no more cost in the long run than what you are spending on keeping it in shape.

COST OF CHANGES

New equipment often needs new footings, structural reinforcements, and remodeling changes. Freight costs, new foundations, installation costs, and other expenses all add to the total bill.

Balancing these costs are possible savings on maintenance. These costs are every bit as important in the mill budget as original purchase costs.

PAYOUT

How soon will the proposed new equipment pay for itself? How much time will be required to start cashing in on the new equipment's added efficiency? Answers to these questions will determine whether or not you should seriously study the possibility of recommending to management that it make replacement.

If the new equipment will pay for itself in less than three years' time, you've found a likely project for modernization—one you shouldn't hesitate to study carefully so that you can make the most intelligent recommendation to management.

Result should be a low-cost operation, strong in every department.

'61 modernization

Getting Modernization Money

Big as your modernization plans may be, they can't get under way without financing—and that's why this straight-from-the-shoulder explanation will help clarify your relationship to your banker.

MANAGING MONEY is becoming an important part of every mill manager's job—whether or not he is immediately involved in company finance. Why? Because every modernizing cost reduction your department makes—every economy you promote—puts your company in a better competitive position.

Add to that the growth of professional management. In today's competition for the top spots, a manager must have an excellent knowledge of his field plus a good general knowledge of other management fields.

That's where money management comes in once again. To be a strong member of the management team, you should know the essential things a banker looks for when your firm applies for a loan to finance modernization or to free capital for modernization.

SEVEN STEPS IN GETTING A BANK LOAN

1. Know your banker and his job.

Strong bank-business relationships are built on personal understanding by each party of the opportunities, obligations, and problems of the other. A strong three-way relationship between the banker, the company treasurer, and the ultimate user of the bank funds will go far toward developing these personal understandings.

2. Tell your banker all about your company.

Your banker cannot, of course, be intimately familiar with every type of business he deals with. It's your job to acquaint your banker with the operations of your company and give him this general background. Describe the characteristics of your business, show him how your business varies from others in the industry.

3. Get your banker and your management team acquainted.

One of the most important things to a banker is the quality of a mill's management. If the banker can convince himself that the managers of a business are honest and that they possess outstanding ability, he is prepared to be more liberal in extending credit to them. Studies by impartial agencies have highlighted the fact that business success is determined by the quality of its management.

It will be helpful to your banker to meet as many members of your management group as possible. This may best be done by having your banker visit you often.

4. Explain your financial position.

Most commercial loan requests are on an unsecured basis. That's why your banker needs reliable evidence to justify the extension of a loan. Most states require by law that banks get financial statements on all unsecured loans and many types of secured loans.

Your banker will want to have historical records of your company, evidenced by about five years' annual audits prepared by your Certified Public Accountant. The financial report should include a balance sheet, profit-and-loss statement, and reconciliation of net worth. Your banker will also find it helpful to have a statement showing the flow of funds into and out of your company during the year and any schedules needed to back up the financial statements.

Your banker will be as interested in the quality of your assets as in the quantity. It will be helpful to familiarize him with the make-up of your asset items.

5. Tell him about textile trends.

Just as your banker will want to know your company, he'll want to know about your industry. Supply him with whatever is available in the way of pamphlets and trade papers.

6. State the purpose of your loan.

Discuss with the banker just how the money you want to borrow will be spent. If you are replacing obsolete spindles with new, faster spindles, take the banker out to the mill and show him the old spindles and discuss with him the relative merits of the new ones. Be sure to have accurate cost figures.

7. Explain your repayment source.

By JULIAN H. SCARBOROUGH, JR.
Assistant Vice President
Loan Administration Dept.
Wachovia Bank & Trust Co.
Winston-Salem, N. C.

Obviously, bank loans are made to be repaid. Just as your banker will want to know the purpose of the loan, he will want to know how you plan to repay the loan. The two methods by which a loan may be repaid are (1) conversion of assets into cash, (2) additional equity funds such as earnings or capital stock.

Conversion of assets, such as inventory or accounts receivable into cash, is the normal way seasonal loans are repaid. A company normally has a peak period in which inventories are built up in the expectation of its future sales.

The second method of repayment of a bank loan is the placing of additional equity funds in the business. The usual source of additional equity funds is the earnings of the company. Term loans may be repaid with debt-service cash.

HOW YOUR BANK ANALYZES YOUR REQUEST

In analyzing your company's loan request, your banker will review three broad areas: (1) the management factor, (2) the economic factor, and (3) the financial factor. And he'll look at ratios.

The Management Factor—This factor may be broken down into ability and integrity. Ability really speaks for itself in reviewing the financial results of the company and its past history. Integrity, on the other hand, is the most difficult of all factors as it is a matter of judgment. Many managements have never faced real business adversity and a banker will have to determine integrity for himself.

The Economic Factor—The economic factor may be broken down into general economic conditions, conditions within a specific industry, and the time factor, all of which influence how your banker will handle your loan request.

The Financial Factor — Your banker will be interested first in the quantity of your items and second in the quality. Quantity means the dollar coverage of the current assets over current liabilities and the dollar coverage of your net worth over your total liabilities or debts. Quantity is best shown by two ratios: The current ratio and the worth-to-debt ratio.

Current ratio—You get this ratio by dividing the total current assets by the total current liabilities. For example, if a company has total current assets of $200,000 and total current liabilities of $100,000, it will have a current ratio of 2.00.

Worth-to-debt ratio—You get this ratio by dividing total net worth by total debts. For example, if your company has a total net worth of $150,000 and total debts of $100,000, you have a worth-to-debt ratio of 1.50 or for every $1 that the creditors have in the business, the stockholders have $1.50. Too low a worth-to-debt ratio would indicate insufficient capital.

Bankers are also interested in the quality of a company's assets. Two ratios used to determine quality are net-sales-to-inventory and net-sales-to-receivables.

Sales-to-inventory—You get this figure by dividing total net sales by total inventory. The resultant figure may then be divided into 365 days to determine the number of days' sales represented by inventory-to-normal-inventory requirements as evidenced by prior years' statements and comparison to companies in a similar line of business. In analyzing your inventory, your banker will be acutely aware of the fact that there is no profit in holding inventory. Profits come from selling inventory. Out-of-balance inventory can have a tremendous effect on profits and the soundness of the borrower.

Sales-to-receivables ratio — This figure is computed by dividing total net sales by total receivables outstanding. The resultant figure may then be divided into 365 days to determine the number of sales' days represented by receivables. This latter figure may then be compared to actual selling terms to assist in arriving at a better idea of the quality of the receivables. Accounts receivable above this minimum can be a danger signal. Accounts receivable that are allowed to drag beyond the agreed date of payment will, in practically every type of business, result in losses much greater than if strong collection policies are followed. Accounts receivable also are expensive to carry considering the cost of money, taxes, and other related expenses.

Your banker is, of course, interested in your earnings. That's why he looks at two other ratios: Profit-to-worth and profit-to-net sales.

It will be well to understand that the actual mechanical computation of the various ratios is only the first step in the analysis of a financial statement. There are no "magic numbers" that your banker looks for in your ratios. A current ratio of 1 may be sufficient in one company, while a current ratio of 5 may not be sufficient in another. Your banker is interested in the complete picture. To work toward this complete picture he will also be interested in the trends in your operations and in an analysis of your individual statement items.

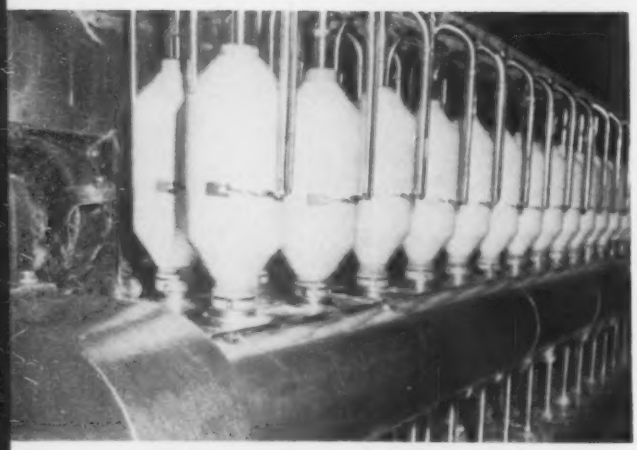
Trends are of utmost importance in statement analysis. Your banker will analyze the trends of working capital and the trend of most of your balance sheet, income, and expense items.

There is an old adage in banking to the effect that one must think in terms of things instead of figures. This means thinking in terms of the actual tangible evidence of the assets instead of the actual dollar figures. For example, a prudent banker will not think of your accounts receivable as, say, $100,000, but will want to know what is actually represented by the $100,000. Are the accounts collectible? How many are past due?

Your banker will make a similar analysis of your inventory. In both inventory and accounts receivable, he will be interested in the liquidity of both assets.

If you have done a good job of familiarizing your banker with your firm, you'll both gain.

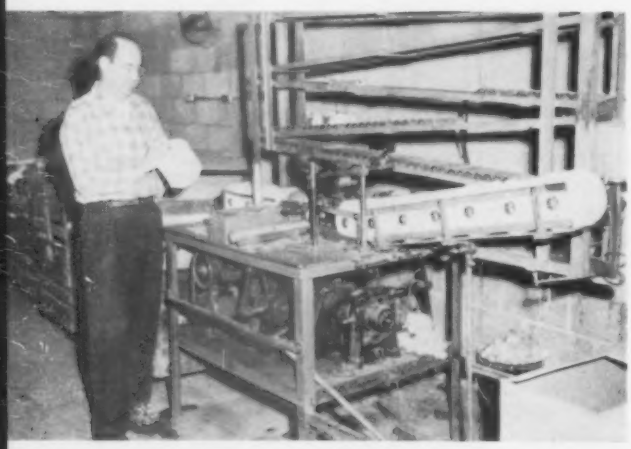
TEXTILE WORLD . . . COST CUTTERS



Saving $15,000 on Labor and Handling

Linn Mills Co., Landis, N. C., is putting 20% more yarn on its 9x4½ roving bobbins by putting four wraps of 2- and 2.80-hk. roving on its flyer pressers. Results: $15,000 to $20,000 a year savings in labor and handling costs. Bobbin weight increased from 21 to 24 ounces. Doffing interval increased 20%. Running time in the spinning creel is up 20%.

This trick may not be practical at some mills, but it's working out just fine at Linn, where 16s to 40s combed and double-carded knitting yarns are made. The secret is to carefully check tension between individual frames. Lay is adjusted one or two teeth. The extra wrap is the equivalent of 5 to 7 teeth on the tension gear. Linn's laboratory can find no quality deterioration as result of the change.



Machine Cuts Out One Winding

Although Valdese (N. C.) Mfg. Co. manufactures most of the yarn it processes, some outside yarn is handled for sale or for customers. This yarn is usually received on spiral paper tubes. Formerly, it was necessary to rewind on dye tubes. The procedure required about five hours for a frame of 288 packages.

Some time ago, the mill developed a transfer or punch-out machine that entirely eliminates this extra winding operation. In 10 minutes, the machine can punch out 288 paper tubes and replace them with stainless-steel dye tubes. It's estimated that the machine can put as many packages on dye tubes in an hour as the average winder hand can produce in a week.

An intangible but very important benefit is the speeding up of the dyeing operation.

Conveyor Cuts Packaging Time in Half

Packaged goods in volume up to 60,000 units a day are handled at Bobby Brooks, Inc., Cleveland, Ohio, with a conveyor formed by V-belts carried by welded steel tubing. With this new conveyor, time for handling packaged goods has been cut in half.

The V-Matic conveyor is approximately five miles long and travels more than 100 fpm. The conveyor fills orders too. One stock room is divided into 22 areas, each served by a conveyor. One section of the warehouse is equipped for pushbutton order filling. An operator at a control panel pushes buttons for style, size, and color.

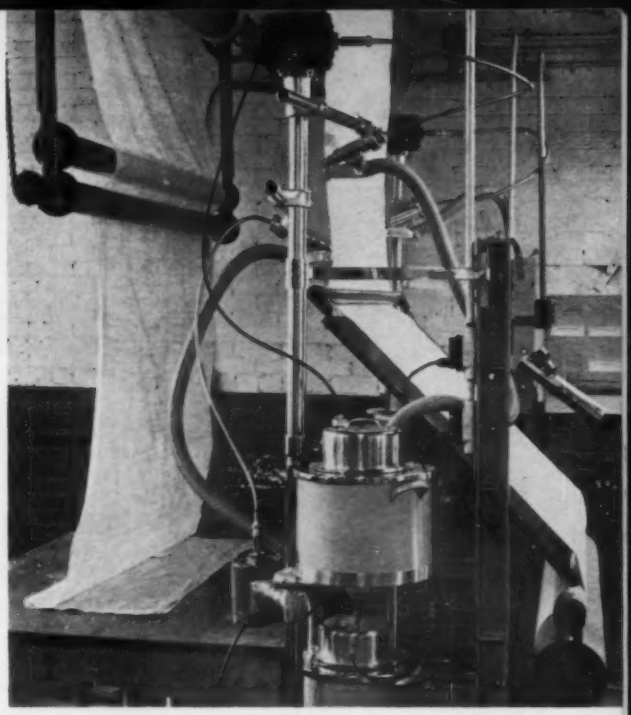
Individual packages are then released from their storage position to slide down to the V-Matic, which carries them to the accumulation department.

Saves 1½ Hours a Day

Loose threads and fabric loops are being trimmed by this new machine at Canada Hair Cloth Ltd., St. Catharines, Ontario, as part of a primary-inspection operation. Therefore the trimmer (Tek-Matic Selvage Trimmer, Tek-Matic Sales Co.) has become an integral part of inspection for defects.

There's now a savings of 1½ manhours each day because all threads were formerly trimmed by hand. And what's more, seconds in finishing are reduced because there are no more "clip misses." Tenter-frame clips used to close on a thread instead of the cloth, and the cloth was usually stained with oil.

The mill added a double trimmer to the magazine side of the cloth and a single trimmer to the opposite edge. They operate at 100 yards per minute.

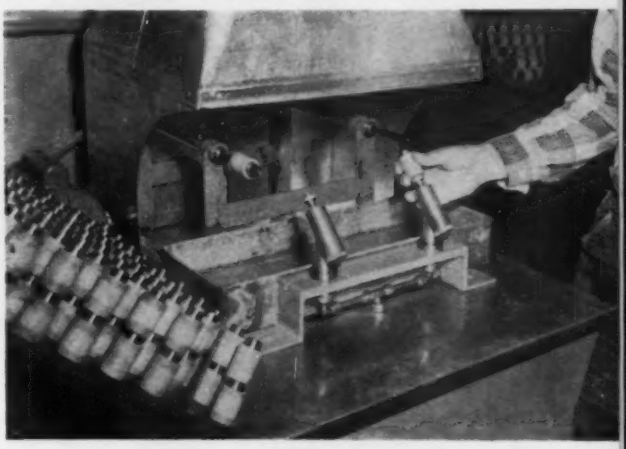


Cleaning Needle-Bearing Rolls Fast

Preparation of needle-bearing rolls for regreasing is no longer a problem at China Grove (N. C.) Cotton Mills Co. Mill-built machine shown here cleans rolls from an entire frame in 30 minutes. Hand cleaning formerly took 1½ hours.

The device basically consists of two revolving spiral brushes, two brass air nozzles (90 pounds pressure), a solvent pan, and an exhaust hood to remove solvent fumes.

Rolls are dipped in solvent and slipped over the brushes, two at a time. In the photo, only one brush and one air nozzle are in use to show the mechanism more clearly. After brushing, the rolls are removed simultaneously and placed on the air nozzles. Here, they are blown out and dried almost instantaneously.

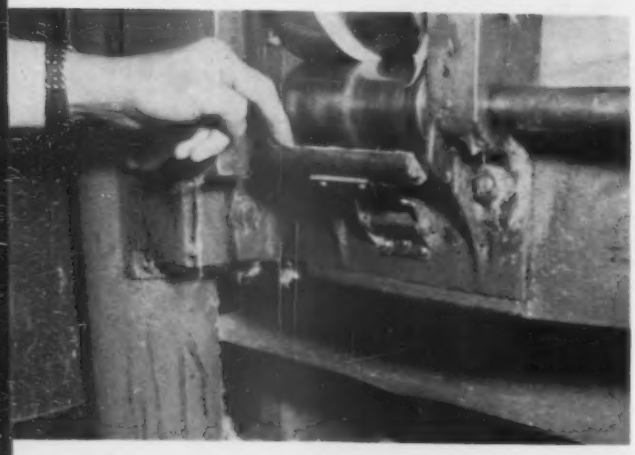


Signal System Cuts Downtime 10 to 15%

Signal lights and a bell connected to the stop motions of new Saco Lowell Model 57 combers are saving 10 to 15% in machine downtime at the Grantville (Ga.) Div. of Flagg-Utica Corp.

A small G.E. snap-off switch activated by the comber knock-off motion turns on a red light mounted on the comber frame when the machine stops. At the same time, an alarm bell mounted on the wall in the middle of the department sounds off and notifies the operator that one or more machines have stopped.

The operator can see each red light from any position in the department. This arrangement makes it easy for him to pinpoint a machine that has shut down. Now he no longer has to patrol the area constantly to keep from losing production.



Clearer Hinge Saves $400 Annually

Carolina's Mill No. 3 at Newton, N. C. is saving $300 to $400 a year by using a simple spring hinge, as used on doors, to keep the clearer from falling off the doffer calender rolls at the cards.

Formerly, these clearers (which normally are fitted into shallow slots below the calender rolls) would fall off and become lost or broken. At the same time, quality was lowered because of lint and fly getting into the sliver.

Some mills have tried to lick this problem by chaining the clearers to the front plate of the card. The clearers still fall out of the slots, and the chains are frequently broken. The spring hinge (photo) keeps the clearer snugly against the calender roll and the pressure of the spring does a better cleaning job.

Clutches Help Boost Production 150%

The automatic sequential button-hole sewing unit now available on Singer sewing machines permits one operator to handle as many as five button-hole sewing machines.

The indexing mechanism actuates two Formsprag (Formsprag Co.) clutches through Micro Switches. One clutch provides the forward drive for the indexing mechanism, the other acts as a check clutch that prevents any backlash or reverse motion of the four-bar linkage that moves the fabric into position.

Operator attention is confined to seeing that the work is properly started in the machine, and removing finished fronts. Up to 325 dozen shirt fronts can be buttonholed in a day by one operator feeding five machines. Previous practice has been to assign two buttonholing machines to one operator.

Clipper Cuts Waste 25%

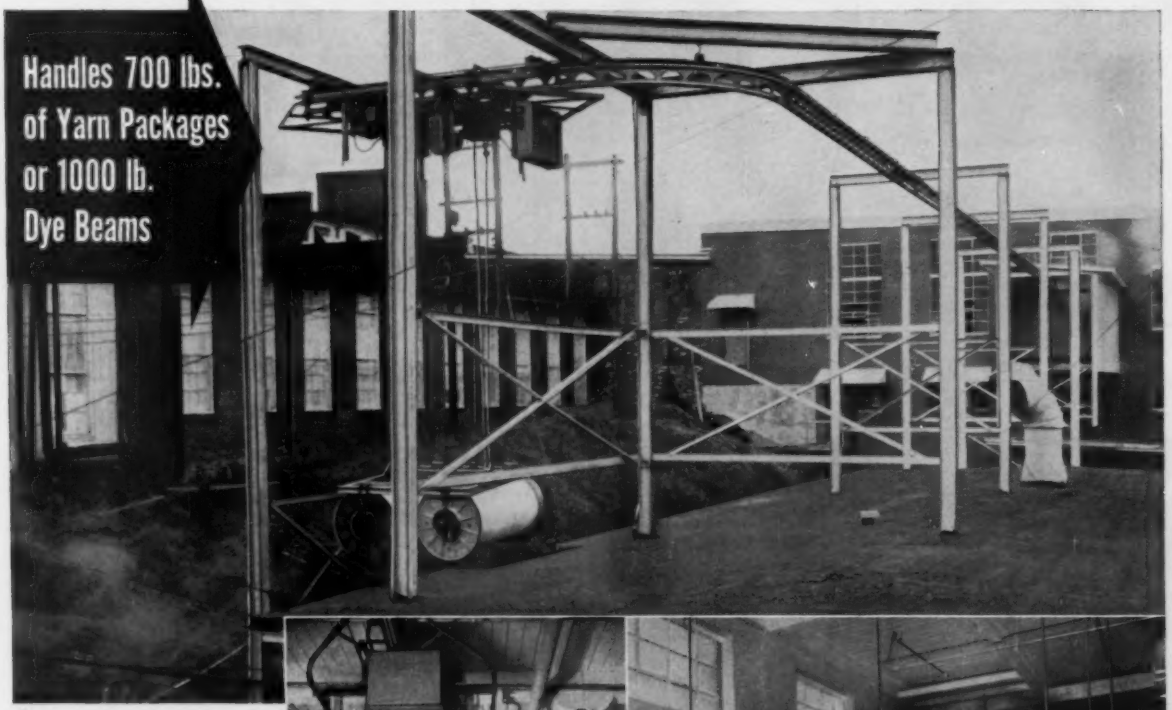
The man in the photograph, Superintendent L. R. Tysinger, Dogwood Hosiery Co., Inc., Thomasville, N. C., is demonstrating the cutting action of a yarn clipper that's saving 25% in waste yarn, reducing seconds and thirds 50%, and reducing needle breakage over 70%.

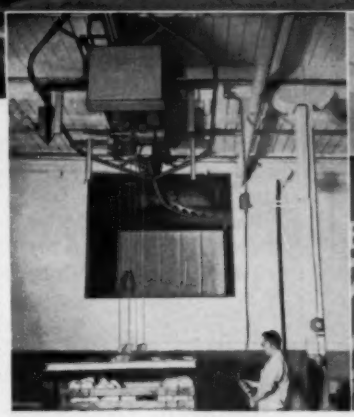
But the most important savings is in labor: twelve girls that formerly operated hand-clipping machines have been eliminated. It used to take 14 girls for clipping. Now there are only two. Therefore trimming costs have been reduced 5½¢ per dozen socks.

Dogwood makes boys mock-wrap socks on Scott & Williams machines with 3-, 3¼-, and 3½-in.-dia. cylinders. There are 143 machines at the mill, and 93 are equipped with the clippers (Knitrol Div. of Uster Corp.) Maintenance is also reduced. The first machine clipper has been operating for 15 months with no attention.

Automatic Handling System Links *FOUR* Mill Areas

Handles 700 lbs. of Yarn Packages or 1000 lb. Dye Beams





Track installation on roof. Track entrance to Quilling Dept. is protected by an enclosure. At left warp beams are being lowered 65 ft. down side of Dye House to entry below ground level.

Starting a load of packaged yarn on way to Dye House from the Yarn Storage. The pushbutton station in the operator's hands has six buttons. Pressing any of the top three will send the carrier to one of the other three departments. The next two buttons are "up" and "down" for operating the hoist without traveling the unit. The bottom button is "stop" for the carrier travel.

Carrier traveling through Quilling Department and about to pass through doors for trip outside over roof. The doors are opened by bumpers on the carrier.

A Cleveland Tramrail automatic handling system at the Virginia Mills, Swepsonville, N. C., has eliminated manual handling between four main yarn-preparation departments: (1) yarn storage, (2) quilling department, (3) warper room, and (4) yarn dyeing. This mill spins a wide range of cotton yarns and many man-made fibers. It specializes in making drapery, upholstery and dress goods.

Although the building is multistory and the warper room is a floor above the yarn storage, the Tramrail system serves both areas and extends to the dye house a considerable distance away. To reach the latter, much of the track is on the outside over a roof, and the load must be lifted or lowered a distance of 65 feet. The overall length of the track is 266 feet.

Push button controls are provided at each of the loading stations in the four departments. By means of these controls, the Tramrail carrier can be directed to deliver a load from one station to any of the others. The unit travels without attendants and will stop at its destination automatically.

The automatic system has proven itself a tremendous factor in providing a smooth efficient flow of materials. No longer is it necessary for workers to haul heavy loads by manually pulled floor trucks for long distances. This advantage has brought about a big saving in time, as well as floor wear, and greatly reduced the need for floor trucks.

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CLEVELAND TRAMRAIL

Overhead Materials Handling Equipment

CLEVELAND TRAMRAIL DIVISION • THE CLEVELAND CRANE & ENGINEERING CO. • 8486 E. 287 ST. • WICKLIFFE, OHIO

Embossed Foil Checks Nips Quickly

You can save 50% of the time usually needed to check a pad nip with Sto-Foil (Stowe-Woodward, Inc.). Here's what you do.

Cut off enough of the foil to run the length of the nip. Place the dull side to the softer roll of the two. Raise the nip and slip the foil well into the nip area. Apply normal pressure slowly and evenly. Then raise the nip and slide the foil out.

Measure with dividers the area of the foil that has been flattened.

A very accurate picture of working conditions at the nip is obtained this way.

(In the photo at the left, Jim Gordon, Stowe-Woodward representative, is checking out a newly ground roll at Jefferson Mills, Jefferson, Ga.)

Machine Improves Hosiery Quality 2%

By tightening up on its quality control methods, Athens Hosiery Mills, Athens, Tenn., recently increased its first-quality hosiery 2%.

Heart of the improved quality control system is a Marvel-Meter machine (Marvel Specialty Co., Inc.). This machine is used right in the knitting room to check the courses per inch on every style of hosiery being produced. A check and record are made on each knitting machine each day. In this way, uniformity of size and quality result.

And quality is reflected throughout the entire mill. In finishing, for example, boarding and pairing operations are now more efficient.

For the Marvel-Meter, Athens is using a table mounted on casters so that the machine can be moved to every section of knitting machines.

Automatic Doors Ease Shipping

When Schlegel Mfg. Co. opened its new plant, (Schlegel Co. Carolina, Chester, S. C.), it didn't wait for costs to pile up. Instead, it installed cost-cutting equipment right at the start. And such an installation paid off.

There are two doors for shipping docks at one end of the building. The doors raise and fold overhead on tracks. And the doors are always closed—because the plant is air conditioned.

When a truck comes with a shipment of yarn or to pick up finished fabric, the driver signals Schlegel's shipping clerk. He presses a pushbutton at the correct door, and the door rises automatically.

Motor and controls (Rowe Mfg. Co.) to open and close a door are overhead at the back of the track well out of the way. A third door at the opposite end of the building has the same controls.

IDEAL
Feathertouch
750

THE ULTIMATE IN DRAWING EFFICIENCY

This Ideal two-delivery Feathertouch 750 was developed for those mills which demand the highest possible speeds. It is of particular value in processing blends or a variety of numbers, where one such frame might produce all the sliver necessary for a certain blend or order.

SIMPLICITY Electro-Magnetic Clutch eliminates belts, shafts, pulleys, etc. Complete and compact electrical system. Only 5'3" high. All parts easily accessible. Permits normal maintenance by average mill overhauler and electrician.

PRODUCTION Actual normal mill production speed is 750 fpm. Produces as much highest quality sliver per hour as late model four delivery frames—with far less total downtime.

EFFICIENCY Each 750 is individually driven and has its own individual vacuum cleaning system which picks out more dirt and fly (but less spinnable fiber) and keeps clearer slubs out of stock. Uses 18" x 42" coiler cans.

ECONOMY Higher speeds, fewer work stoppages, and lower operating and maintenance costs produce highest quality sliver at the lowest per pound costs.

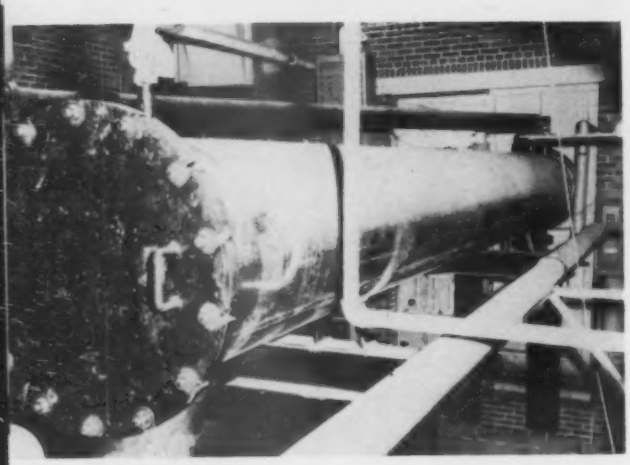
DIVERSITY Ideal Feathertouch Drafting Systems are readily adaptable to processing carded and combed cotton, wool, and all types of synthetics and blends of staple lengths ⅞" through 3".

The Ideal Feathertouch 750 is the fastest, finest, and most efficient drawing frame you can buy. Write for full information.

Ideal Industries, Inc.
Bessemer City, N. C.

THE ORIGINATORS OF HIGH SPEED DRAWING

CIRCLE 117 ON READER SERVICE CARD



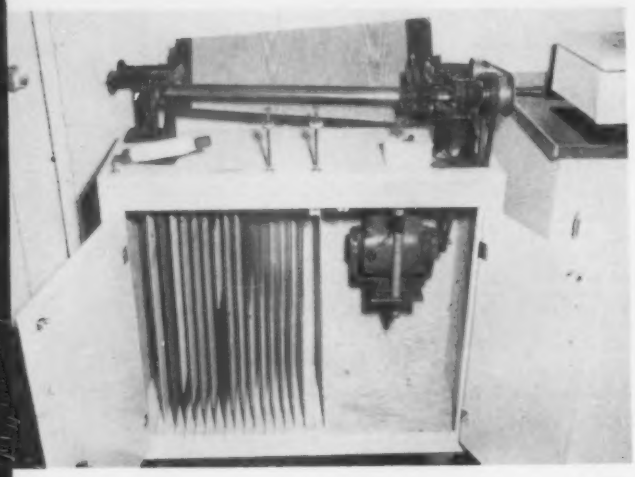
Dyehouse Saves Steam

Today Pottsville Bleaching & Dyeing Co., Port Carbon, Pa., is reclaiming the heat for its waste water. Result: savings of 150 to 200 horsepower of steam.

This waste-water heat-reclaimer (photo) was built by the Patterson-Kelley Co., Inc. It's a closed pressure type made of Type-316 stainless steel on the waste-water side and coated-carbon steel on the fresh-water side.

Fresh water flows directly from city mains. The heat reclaimer raises the temperature from 45 to 95 F., adding 6¾-million Btu. per hour to 270 gpm. of water. Waste water averages 120 F.

Heated fresh water feeds to a 3,000-gal. storage tank. At this point the temperature is raised to 160 F. —ready for dyeing or bleaching use.



Roll Testing in 20 Seconds

Roll testing at Rex Mills, Ranlo, N. C., has been simplified and speeded up by the use of a Toenniessen taper-board yarn-inspecting machine. Patterns on the board show defects in both top and bottom rolls, aprons, and other parts of the spinning frame. The test is so sensitive that a perfect roll dropped on the floor will produce a pattern.

Normal time for testing a bobbin is about 2 minutes. Rex has cut this time to 20 seconds by speeding up the machine and running only half a board per bobbin. If a pattern does not appear on the first half of the board, it is assumed that the drafting system is functioning properly.

Another cost-saving modification is the mill-built mobile cabinet, which makes it possible to wheel the machine into the spinning room.

Cuts Yarn Handling Costs 50%

Valdese (N. C.) Mfg. Co. recently enclosed some 2,000 square feet of outside shed area to use for yarn storage. The area is on two levels connected by a ramp that climbs about 4 feet in a distance of 50 feet. Problem: how to get the heavy (500 pounds) trucks up the ramp?

At first, two men were assigned to push each box up the incline. Not only was this a backbreaking job, but labor cost was excessive for moving material such a short distance.

The master mechanic was asked to build a cargo lifting device that would easily haul the yarn up the ramp. He came up with the carrier shown in the photo. It is lifted above the floor by a one-ton Yale hoist. Then one man "leads" the carrier up the ramp, gradually raising the carrier to compensate with the angle of incline. Savings: $3,000 per year.

Brings cushioned, soft starts to textile machinery!

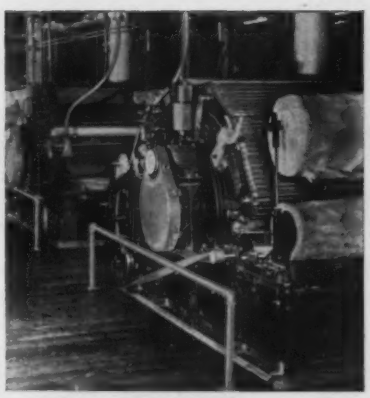
Flexidyne picks up the load smoothly—saves down time from broken ends, keeps yarn uniform. It accelerates quickly to full speed and then operates at 100% efficiency. It saves on motors, controls and power—reduces maintenance—protects motors against shock and overload. Torque can be changed by varying the dry flow charge of heat treated steel shot that is employed to start loads *with fluid ease*. This revolutionary drive is being used with great success in:

• openers • extractors • condensers • beaters • pickers • cotton, wool and synthetic cards • warpers • twisters • roving frames • fly frames • slubbers • tenter frames • slashers • cloth rolling heads • cloth shearing machines

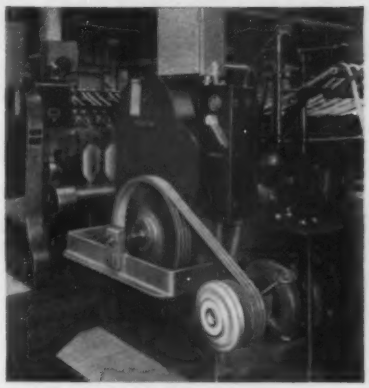
Flexidyne is available from stock in 8 drive sizes and 10 coupling sizes for capacities from fractional to 1000 hp. Ask your Dodge Distributor, or write us for complete technical bulletin.

Dodge Manufacturing Corporation, 1400 Union Street, Mishawaka, Ind.

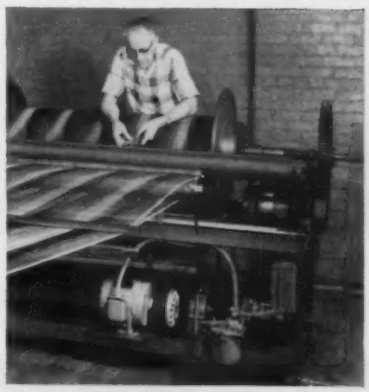
The Products with the Pluses... **DODGE** *of Mishawaka, Ind.*



INDIVIDUAL CARD DRIVES



ROVING FRAMES



LONG RAIL BEAM WARPERS

FLEXIDYNE

THE DRY FLUID DRIVE

CALL THE TRANSMISSIONEER—your local Dodge Distributor. Look under "Dodge Transmissioneer" in the *white* pages of your telephone book. Factory trained by Dodge, he can give you valuable assistance.

Powered Stapler Speeds Work 50%

Majestic Specialties, Inc., Cleveland, Ohio, packages several thousand sweaters, dresses, and textile novelties per day.

Most go into individual paper jiffy bags, which are sealed at one end.

After the bag is loaded, staples are used to close the open end of the bags.

Majestic recently installed a portable electrically operated Bostitch BSE2 stapler (Bostitch, Inc., E. Greenwich, R. I.) for this job.

Result: Majestic reports "at least 50% greater packaging speed." The machine drives in ¼-in. staples automatically and uniformly. An adjustable stapling gauge can be set to any depth up to 4¾ inches, which accommodates all bag sizes used by Majestic.

Printing Machine Cuts Labor 66%

Now, in only 5 hours, one operator prints all the hosiery labels for an entire week (14,000 dozen pairs) at Villa Rica Hosiery Mills, Villa Rica, Ga.

Formerly, Villa Rica had an old flat-bed printing machine for printing individual labels for its men's and boys' plain and fancy socks and misses' anklets. This machine required the constant attention of an operator because he had to remove the labels one at a time. Fifteen man-hours per week were used to print the labels.

The new machine (Soabar Co.) runs itself after it is set up for a given label. It prints 150 labels per minute, and the magazine holds 500 labels. When the magazine is filled, the operator removes the labels and checks the number of labels printed. Therefore he knows exactly when he has printed enough labels.

150% More Trash Removed

The Grantville (Ga.) Div. of Flagg-Utica Corp. has improved the quality of its thermal cloth (for cold-weather underwear) by modifying some machines.

By taking out the old grid bars, separators, etc. in two Centrif-Air Superior cleaners and replacing them with a new Model 5 cleaning section, the mill is now able to take out 100 to 150% more motes, leaf, pepper trash, and short fibers. This is particularly important as the end product is scoured, not bleached.

The cleaning section, manufactured by Centrif-Air Co., consists of a series of bars arranged so that they can be adjusted to clear various grades of cotton by simply turning a screw. Older type screens and grids were not adjustable.

To give better cleaning, the improved grids (arrow) are set somewhat lower than and at a different angle from the older models.

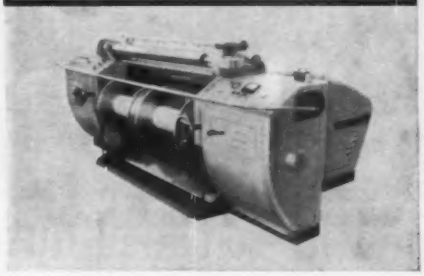
A Battery of Cocker Tricot Warpers in
One of the World's Finest Mills

The COCKER MB-55-32 Multiple Beam Tricot Warper is EXTREMELY VERSATILE

The MB-55 offers great economies to mills which produce a wide variety of tricot beams. It will accommodate single beam widths from 40″ through 55″ between flanges, and double beams from 19″ through 25″ in width—up to 32″ in diameter. Changeover from one assembly to another is rapid and simple.

Constant beam density, which is maintained by a horizontal plane presser roll, is another advantage of the MB-55. Loading of roll can be either pneumatic or hydraulic. Special presser roll carriage construction increases accuracy of roll loading.

The MB-55 provides an electro-magnetic brake for each presser roll assembly and for each spindle. This permits the most rapid stops—even at 600 YPM—without slacking or rolling of ends due to beam back-up.



The MB-55-32 with
Dual Beam Assembly

Accessibility is another feature of this machine. Easily removable panels permit access to internal parts without disturbing the yarn or stopping the warper. Individual controls are within full view and easy reach of the operator.

The Cocker MB-55 offers you flexibility and economies not found in other tricot warpers.

Write for Full Information Today

COCKER MACHINE & FOUNDRY COMPANY

IN CANADA:	IN MEXICO:	PLANT & OFFICES	WORLD'S LARGEST DESIGNERS
Contact W. S. Clark Montreal, Canada Oxford 7-2242	Ing. J. Via, Jr. I. La Catolica 45-911 Mexico, D. F.	at Ranlo, N. C. MAILING ADDRESS: Gastonia, N. C.	AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

3 new up-to-the-minute colors in CHROMSPUN® acetate

Again Eastman heeds the swing of the fashion pendulum to bring you the colors of the hour in apparel and home furnishings:—

Alpine Blue 335 is a new Chromspun hue that follows the trend toward blues with a warmer cast.

Fiesta Pink 336 is a rich raspberry pink with the vitality so important now in fashion and decoration.

Regal Violet 337 expands the Chromspun color range in the rapidly growing orchid-to-purple family.

And don't forget the new Chromspun Diamond White 332 for a more dramatic white, introduced earlier this season. This is the kind of timing that has kept Chromspun ahead in color thinking . . . ever since it became the first commercial solution-dyed color line in America ten years ago.

Chromspun is the trademark for Eastman color-locked acetate fiber

EASTMAN CHEMICAL PRODUCTS, INC., SUBSIDIARY OF EASTMAN KODAK COMPANY, 260 MADISON AVENUE, NEW YORK 16, N. Y.

What's New This Month in . . .

Fibers, Yarns, and Fabrics

News for Consumers

Another breakthrough in wool—an all-wool sweater that you can machine wash and tumble dry. A sweater that needs no blocking after laundering and does not pill. A sweater that does not shrink over 5%. (This percentage is the relaxation shrinkage, which takes place during the first washing and not during subsequent washings.)

Puritan Sportswear Corp. has come up with this product. The company has knitted a lamb's-wool fabric, treated it with a chemical process called Dylanize, sewed it into a sweater, and marketed the finished product for the fall men's-wear season.

The company is offering a group of these sweaters, called the Aqua-knit group, in 15 colors and 5 styles. They retail from $8.95 to $15.

Enters New Market

Tusson is now going into curtain and drapery fabrics in blends with other rayons. Tusson is American Bemberg's new slubbed rayon and a cousin to Cupioni.

Not too long ago, American Bemberg introduced this rayon in blends with silk for lightweight blouses and dresses.

For Half the Price

Liberty Fabrics of New York, Inc., has just introduced new raschel lace designs in Taslan textured nylon. The fabrics resemble the expensive, imported, hand-clipped lace but cost only about half as much. The Taslan lace differs from the imported fabric in pattern. The Taslan lace has a continuous all-over pattern and the clipped imported lace has a discontinuous pattern.

Liberty's initial lace production is in Maline-type patterns. These patterns are available in 45-in. widths with matching trim lace. Additional patterns, including Alencons, are planned for fall. Bobbinette fabrics that contain spandex fiber—and slated for the corset and brassiere market—are being made to coordinate with the lace patterns.

Planning for '62?

You should be. And to do this, to help you keep up with the trends, to give you ideas that you can use for your spring and fall planning, the Fibers Div. of American Cyanamid Co. has something for you.

It's a color card. It spotlights important new colors from the Paris and Italian spring collections. The colors—created in 100% Creslan—reflect the major color trends that Maurice Levin, Cyanamid designer, found during his coverage of the foreign collections. To supplement the card, Mr. Levin chose fabrics that illustrate the new trends.

Single copies of the color card are available to mills, designers, and manufacturers upon request to the Fibers Div. of Cyanamid.

It's a Blend

The Pile Fabrics Div. of Collins & Aikman is using an acrylic and a modacrylic blend in its new tufted, cut-pile rug. The pile is 2 inches long. Creslan and Dynel are the fibers used, in a 60-40 proportion. The new rug is called Cloud 9.

You can wash the rug in warm water without losing its qualities of resilience, soft texture, and colors.

The rug is available in 20 colors, in 17 sizes, and in round, oval, and oblong shapes. It has a heavy duck backing.

Wholesale prices start at $2.90 for a 24-in. round rug. Largest size available is 9x12 feet. This size wholesales at $97.75.

More Chromspuns

Eastman Chemical Products, Inc., has added three colors to its Chromspun line. They are Alpine blue 335, a warm medium blue; Fiesta pink 336, a raspberry; and Regal violet 337, a deep-toned shade in the lavender-to-purple family.

The Chromspun line now consists of 30 shades.

Lightweights Move

There's a sharp movement toward very lightweight fabrics for men's and boys' wear, less than 9 ounces per linear yard, the Wool Bureau reports.

Men's-wear fabrics of these weights rose 26% in 1960 above 1959. Women's wear fabrics rose 14%. These gains favored woolens over worsted in men's wear, and worsteds over woolens in women's wear.

Woolen constructions for men's wear increased their share of lightweight fabrics 10% in 1960. Worsted constructions in women's wear increased 3% during last year. There was another meaningful shift in the 13- to 16-oz. men's-wear fabrics. Here worsteds increased their share from 26% of 1959 yardage to 38% of 1960 yardage.

Two New Firsts

Fulton Cotton Mills, Inc. has announced two new steps in the manufacture and merchandising of its upholstery fabrics.

One of the firsts: The company is now producing printed upholstery materials from the raw-cotton operation to the finished fabric.

The second of the firsts: The company is producing decking materials that are color coordinated

with the various designs that are available in the printed upholstery.

Designs in upholstery fabrics are available in early American, French, and Italian provincial.

News from Italy

Pirelli Lastex (Italy) has announced that it will produce an elastic yarn called Vairin under a license from United States Rubber Co. The new yarn is made of polyurethane resins.

Vairin is spun as a continuous filament in extremely fine counts. The yarn has a good resistance to oxidation, abrasion, and drycleaning solvents. It can be dyed.

New Name for Old

American Viscose Corp. is now using a new name for its Colorspun trademark, once used for its spun-dyed rayon and acetate yarns and fibers, and fabrics made with those fibers. The new name is Avicolor.

The company will permit the use of the new name only on fabrics that meet the company's quality standards of performance.

With the introduction of this new name, American Viscose is also expanding its color range.

Clear and Muted

Franklin Mfg. Co., selling agent for Textile Div., U. S. Rubber Co., is offering a new woven fabric called Bellezza. The new fabric is shown in both clear and muted-tone combinations.

Traditional red-navy-yellow and green-navy-yellow plaids lead the tartan group. Contrasting bright shades and coordinating pastels in both block and check overplaids lead the semitraditional group.

The fabric is woven of yarn-dyed blend of 50% Creslan and 50% rayon. It's machine washable and needs little or no ironing. It's highly wrinkle resistant and will retain pleats. Franklin is aiming the fabric at the misses', juniors', and children's markets for the coming fall season.

Foam and Fabric

United States Rubber Co., Naugatuck Chemical Div., now holds a patent on a technique for foaming sheet plastic laminated to a fabric backing. The company applied for the patent in 1957.

Here's the process: A chemical blowing agent is used to make the foam. The manufacturer blends the specially formulated vinyl compound and then forms it into a sheet. Then he laminates the sheet to a fabric backing. He applies heat to the laminate and this heat causes the blowing agent to turn into a gas. This gas, trapped in tiny bubbles within the plastic film, causes the film to expand into a foam form.

Naugatuck Chemical made the Marvinol vinyl resins and the Celogen AZ agent, which are used in the process. The company is reviewing the possibilities of licensing the foamed laminate process to both domestic organizations and overseas companies.

Good Looks Plus—

That's what Rubber Fabrics Corp. is now offering. It's a new laminated fabric called Slimmer.

The new fabric combines stretchable nylon lace and stretchable nylon tricot. Sandwiched between the two fabrics is a thin layer of latex foam rubber.

The fabric offers several benefits to swimsuit and girdle manufacturers. They can get two-tone effects with this fabric because the nylon lace—available in white, black, and colors—is laminated over the white of the latex, which shows through. They can get a fabric that has a two-way stretch. The fabric will not fade and is quick drying.

Tufted in Nylon

Loomweve Rugs & Carpets has added a new grade to its Luxury-Tufted collection. It's a sculptured-surface grade of Cumuloft yarn nylon.

Called Round the Clock, the new carpet is tufted in a two-level pile. It comes in 13 high-fashion colors. It's spot and stain resistant as well as moth and mildew proof.

Round the Clock, available in 12-ft. and 15 ft. widths, will retail at about $8.95 per square yard.

It Won't Break

What is it? It's a heavy-duty nylon thread that Nylex Co., division of Advance Silk Thread Corp., has developed.

The new thread is now made in 18 colors and will soon be available in a limited number of variety stores.

Nylex has applied a special bonding agent to the thread that gives the thread a slight stiffness for easy threading and for preventing slippage on the spool.

Satin and Plain

Westinghouse Electric Corp., Micarta Div., is now offering two epoxy-treated nylon fabrics. One is a satin weave and the other is a plain weave.

One fabric weighs 13 ounces per square yard. Monofilament nylon of 840 denier is used in a 5-harness satin weave. The epoxy resin is 40% B-stage. This fabric works well for molding shapes and contours. It also has good chemical resistance. The plain weave has similar characteristics.

Tenting, Anyone?

Burlington Industrial Fabrics Co. has developed a new 4-oz. uncoated-nylon fabric for tents. DuPont's Type 330 nylon is used.

Burlington has used new weaving and finishing techniques in producing this fabric that gives breathability plus water resistance. The fabric weighs about half as much as conventional tent fabrics. Unlike heavier-weight fabrics, it's easily portable in tent form. It folds compactly, dries rapidly, is resistant to rot and mildew, and doesn't stiffen in cold weather.

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Since 1898 experienced mill men have relied on the uniformity of Victor Mill Starch. They know that year after year Victor can be depended upon for better penetration, stronger warps, greater smoothness.

They have also learned to rely on Keever technicians. When mill problems come up, they know that Keever has the experience and facilities to solve them. Let them prove it to you.

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GENERAL OFFICES COLUMBUS 15, OHIO

CIRCLE 125 ON READER SERVICE CARD 125

TEXTILE WORLD . . . News from the Mills

American Thread Co., New York, N. Y., has launched a machinery-modernization program costing about $500,000 at its Hampshire spinning plant, Clover, S. C.

Avondale Mills, Sylacauga, Ala., has bought over 95 per cent of the outstanding stock of the Pepperton Cotton Mills, Inc., Jackson, Ga. The acquisition is the company's first expansion of manufacturing operations outside the state.

Bedford Blanket Co., New Bedford, Mass, will merge with Standard Kollsman, Inc., New York, N. Y. The latter firm manufactures heating units for electric blankets.

Betterwear Hosiery Mill, Inc., Hickory, N. C., division of Rudin & Roth Hosiery Inc., New York, N. Y., has started an expansion program at Newton, N. C. The company will add about 8,000 square feet to the 40,000 square feet in the present building. The new addition will be ready for occupancy by June 1.

Cadillac Textiles Inc., Valley Falls, R. I., has liquidated its finished-goods operation but will continue its gray-goods operation at 1407 Broadway, New York, N. Y.

Carlisle Finishing Co., Carlisle, S. C., division of Cone Mills Corp., has started building a 50,000-sq.-ft. brick addition.

Cluett, Peabody & Co., Inc., Waterford, N. Y., has agreed to buy the capital stock of Boyd-Richardson Co., St. Louis, Mo., operator of specialty clothing stores. The acquisition is subject to the approval of the Boyd-Richardson stockholders. The company has also announced that the Arrow International Div., has opened its fifth plant in Latin America at Guatemala City, Guatemala.

Gordonsville Industries, Gordonsville, Va., is the new name for a lace-manufacturing plant financed by the Gordonsville Development Corp. The plant will manufacture raschel lace.

Graniteville Co., Graniteville, S. C., has bought 3 Model M6A Even-Draft drawing frames and two Super Lap machines for its Warrenville (S. C.) plant.

Industrial Rayon Corp., Cleveland, Ohio, has concluded negotiations with Spun-lo Eiderlon, Inc., New York, N. Y., for the latter firm to continue the sale of Spun-lo and Eiderlon fabrics. Industrial Rayon will terminate production of these fabrics at its Covington (Va.) plant in about a month.

Joanna Cotton Mills Co., Joanna, S. C., has ordered 50,000 Roberts Supreme ball-bearing spindles from the Roberts Co., Sanford, N. C.

The Kendall Co., Boston, Mass., has completed the transfer of its textile-division headquarters from its East Morehead St. location to a new $750,000 building on Carmel Rd., Charlotte, N. C. The company has also announced plans to spend between $8- and 9-million on capital improvements in 1961. The company has announced that its division, Parke, Davis & Co., Detroit, Mich., approved plans for a new surgical-dressings manufacturing plant at Greenwood, S. C.

Klopman Mills, Inc., Greensboro, N. C., on June 1 will lease from Burlington Industries, Inc., the Old Dominion Finishing Co. plant in Hurt, Va.

Maverick Mills, Boston, Mass., has announced plans to build a new $4-million textile plant near Greenville, S. C. to be named White Horse Mill No. 2. The new plant will be located adjacent to White Horse Mill No. 1.

Owings Mills, Inc., Cowpens, S. C., has announced construction of a $150,000 plant. The plant is expected to be in operation around the middle of the year.

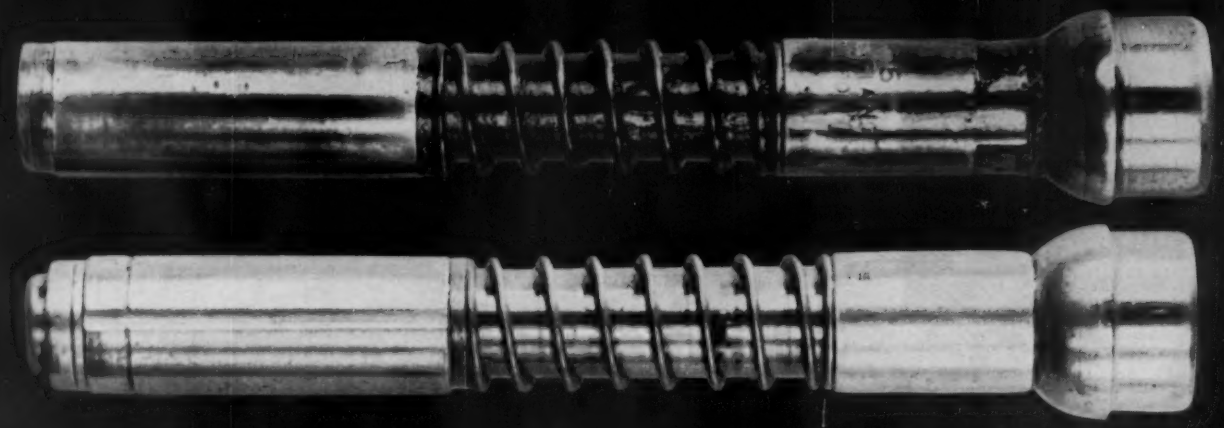
Reeves Brothers, Inc., New York, N. Y., has licensed Nylco Products Inc., Clinton, Mass., to carry out Reeves' patented heat-laminating process and to use the trademark Curonized when the lamination has been made with Curon foam. The company also appointed the Ames Textile Corp., Lowell, Mass., a licensed laminator for the patented heat-laminating process. The company also has announced the formation of its new Fiber Div. for the production and sale of staple, tow, and multifilament polypropylene.

Sanco Textile Print Works, Phillipsburg, N. J., is the name of a new wholly owned subsidiary of the Sanco Piece Dye Works, Inc., Phillipsburg, N. J. Plans are for the new division to occupy some 40,000 square feet of space in the parent plant.

Somerset Knitting Mills, Inc., Philadelphia, Pa., has leased 18,000 square feet of space in the Allegheny Industrial Center, directly across the street from the company's present 45,000-sq.-ft. plant This space will be used to expand shipping operations and also to improve finishing production.

Stretch Fabrics Inc., New York, N. Y., has purchased a building on South Sixth St., Allentown, Pa., and will move its knitting machinery from the present Allentown location on North Lumber St. The move marks a doubling of the firm's plant space.

Yorkshire Worsted Mills, Inc., Lenni, Pa., has announced that its weaving operations are now consolidated in the former Desurmont Mill on Fairmount St., Woonsocket, R. I. The company has moved 24 looms to the Woonsocket plant from its plant in Lenni and plans to set up forty more later.



You can see the difference that Vexilla D makes. Both roller bearing inserts operated 5,000 hours at 9,000 rpm. *Top:* Bearing lubricated by competitive oil. Note heavy lacquer deposits. *Bottom:* Bearing lubricated by Vexilla D.

BULLETIN:

Shell develops a spindle oil that scours out of fibers, cuts misting loss, helps save yarn and money

Leading mills compared Shell's new Vexilla® Oil D with competitive spindle oils. In a typical test, Vexilla D and another oil were run on identical frames for 5,000 hours at 9,000 rpm.

With Vexilla D there was no corrosion, no deposits to cause spindle wobble or excessive ends down.

Shell's new oil is designed to protect yarn. It scours out of practically all fibers—synthetics included. Read how this new sludge-fighting Shell oil may save money on your frames.

New Shell Vexilla Oil D was developed to solve two major spinning problems:

1. To keep contaminants from sticking to spindle blades or settling in bolster cases—a common cause of spindle wobble.

2. To prevent excessive power consumption due to increased oil viscosity.

Cleaner spindle parts

New Shell Vexilla D is a *dispersant* oil. This simply means that Vexilla D keeps little bits of sludge (oxidized oil) and lacquer from "growing" and adhering to sensitive spindle parts.

In six months or less you start seeing the results of Vexilla D's dispersancy. Spindle blades are bright and clean—free from sludge and lacquer deposits.

There is less spindle wobble, less spindle drag. Fewer ends down. Less maintenance.

Resists foaming, misting

Vexilla D is specially formulated by Shell to resist foaming. It contains powerful additives to help prevent foaming and misting—even at maximum speeds. Oil stays in the bolster where it belongs.

But Shell didn't stop there. A special cleansing agent was also added to Vexilla D.

No longer need good yarn be ruined by oil thrown up by spindles. Vexilla D does not stain yarn. It scours out. Mill experience proves it.

Check your Shell Industrial Products representative for complete facts on new Vexilla Oil D. Or write: Shell Oil Company, 50 West 50th Street, New York 20, N. Y.

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CIRCLE 127 ON READER SERVICE CARD

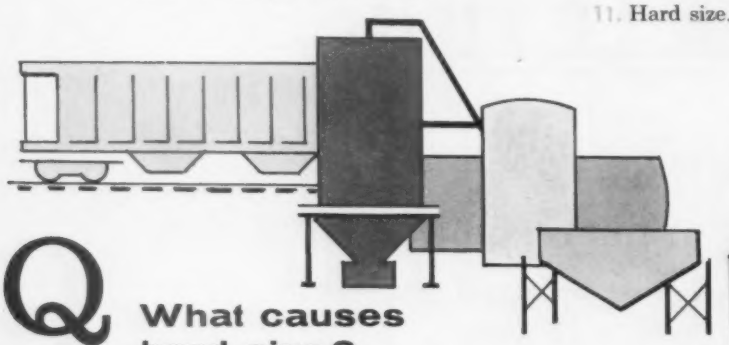
What you should know about STARCH*

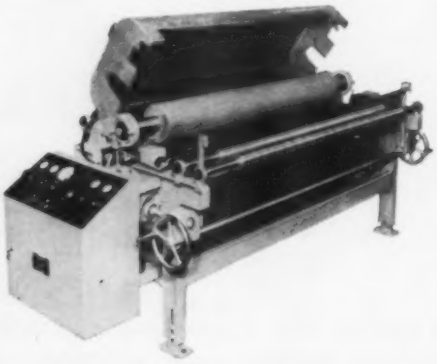
YOU PROBABLY KNOW—BUT OTHERS MAY NOT

Q What causes stuck, taped or twisted ends?

A

1. Too many ends per size box.
2. Size level in size box too high.
3. Size turbulence in size box.
4. Improper tension on slasher.
5. Size box temperature too low.
6. Improper creel beam alignment.
7. Moisture content of sized warp too high.
8. Faulty warping.
9. Beam heads in poor condition and out of line.
10. Ends rolling in size box.
11. Hard size.





Q What causes hard size?

A

1. Lack of sufficient agitation in size box to prevent skimming.
2. Size box temperature too low.
3. Damaged or unevenly dressed squeeze rolls.
4. Failure to drain and wash out size box at regular intervals.
5. Failure to completely drain and wash out cooking kettles after each size mix.
6. Failure to drain and wash out storage kettle at regular intervals.
7. Partially or improperly cooked size.
8. Adding cold water to cooking kettle when adjusting cooked size level.

Q What are the best starches available for sizing cotton and spun synthetic warps?

A

OK BRAND STARCHES, of course, manufactured by THE HUBINGER COMPANY.

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KEOKUK, IOWA

Manpower Management

By PAUL A. KING, Labor Relations Counsel, New York City

Community Action Sets Aside Company-Won Election: Having the town on your side may help you win a representation election, but at the Glasgow (Va.) plant of James Lees & Sons, it boomeranged. 316 votes were cast for the TWUA; 1674 against and the NLRB set aside the election because of community interest in keeping out the union. The local bank cashier had deferred loans to employees; the Chamber of Commerce had mailed a letter to plant employees urging a no-union vote; an editorial had appeared in the local newspaper opposing the union's coming; a neighboring councilman had spoken up against the union; general rumors had been widespread that if the union came in, Lees would go out. The NLRB admitted that the company was not responsible for this but nevertheless set aside the election on the grounds that third-party conduct had "created an atmosphere of fear and confusion" that precluded a free election. Two dissenting board members pointed out that Lees' employees had the opportunity to evaluate community propaganda.

White-Collar Unions: One step in keeping them away from your doorstep is to watch your wage- and salary-administration policy closely, according to a 2002-company survey run by the National Office Management Association. Bad handling of this function was cited most frequently as being the main reason why white-collar employees sign up.

No Severance Pay If There's Another Job: At Globe Woven Belting, TWUA members with 15-year service records who are laid off permanently are entitled to severance pay. However, there's no severance pay for an employee who refuses a transfer to a suitable job, ruled Arbitrator Harold M. Sommers.

Pensions and Alimony: Like love and marriage, they go together. The typical clause in the pension agreement to the effect that benefits cannot be assigned or attached to pay debts of a pensioner will not apply in most states to awards for alimony or support of a child, ruled an Alabama appeal court.

Veteran Forfeits: You are not compelled to take back a former employee who voluntarily decided to stay in the armed services after his 4-year compulsory hitch was up, ruled a court.

Early Vacationer Sticks Company: If you are good natured enough to give an employee a paid vacation before his vacation-qualifying date, be sure you are of the stuff that can grin and bear it if he quits on you before he has earned that vacation. A Connecticut arbitration panel ruled that under the law of that state—and in particular under this company's union contract—the advanced vacation pay cannot be deducted from the terminated employee's final pay.

Union Members are Men—Not Boys: Arbitrator W. Roy Buckwalter told 16 employees of Oxford Textiles Finishing Co., Inc., that they have no right to take the law in their own hands. If the company was violating the short-shift clause of the union contract, the right thing to do would be to file a grievance—not fail to report.

Suspending The Mentally Ill: You do not have to wait until a mentally-ill employee does something terrible such as knifing his foreman or a fellow worker. If you want to suspend him you can do so, according to Arbitrator

Manpower Management

. . . *Begins on page* 129

Carroll R. Daugherty, but you must have good evidence to support your case.

Pay For Work Breaks: For 15 minutes in the morning and 15 minutes in the afternoon all plant operations came to a halt—all employees stopped work and did whatever they pleased. They talked, played checkers and poker, shot craps, listened to a preacher, purchased refreshments from a mobile wagon, and so on. However, a federal court of appeals ruled that these breaks might be included as time worked in computing wages under the Federal Wage and Hour Law. Reason: These breaks increased worker efficiency, increased output.

Accident-Sales Ratio Exposes Heavy Dollar Toll: To bring home to workers the high cost of industrial accidents, Union Bleachery, Greenville, S. C., dramitized accidents on basis of cloth output. Explained to employees that if Union Bleachery received 7¢ per yard for finishing cloth, the mill would be required to secure and run over 357,000 yards for each $1,000 spent on accidental injuries. Their figures were based on a Harvard Business School survey that revealed that $25 worth of material must be processed, finished, shipped, and sold for every dollar that the company spent on accidental injuries.

Anti-Union Propaganda Okayed: Putting an extra $5 bill in each employee's pay envelope with an anti-union message and distributing the envelopes earlier than usual—in fact during the morning of a scheduled election—was not enough to set aside the election, in the opinion of the NLRB. The message from management read: "This $5 is yours—now the CIO wants us to take at least $5 out of your pay envelope each month and send it to them. To keep the CIO from getting $60 a year out of your money, vote against them in the election today. Sixty-dollar—minimum—yearly dues is only a starter. There are also initiation fees—and possible assessments—'political contributions', fines, and other charges. What a difference there is between CIO big talk—and the true facts."

How Much Do Garnishments Cost? Here's a statistic you may wish to quote in your employee newspaper—or put on the bulletin board as a preface to an anti-garnishment rule. The Crane Co. of Chicago estimated that each garnishment cost the company $50; each wage assignment $20. Incidentally, when the company found that 1480 of these documents had been filed in a 16-month period, something drastic had to be done. Up went a new rule: Two of them served within a 12-month period and the employee could be fired. A fair rule, said an arbitration panel, even where there's a union contract—provided all employees are told about it and it is enforced uniformly.

TWUA Complains: TWUA President William Pollack is supposed to have publicly announced that the union's contract coverage has fallen off from a 1947 figure of 450,000 to a current 220,000. In the South the decrease went from 120,000 to 60,000. Unionization of new shops has come to almost a dead stop, he admitted. Reason? Slick southern lawyers, the Taft-Hartley Law, and the NLRB machinery.

For Whom is the Coffee Break a Break? Most of the 5200 companies replying to a Personnel Journal survey on coffee breaks do not use it as an employment inducement or mention it as a fringe benefit—and from the workman's compensation point of view this may be a good idea. A newly-hired employee in Minnesota was told by her employer that she could take a coffee break in the morning and afternoon—as part of her employment deal. Since the revitalizing cup of caffeine couldn't be purchased in the plant, she went outside for her quota. And, there, one day, she fell—on a public sidewalk. Hurt herself badly. A good workman's compensation claim, the State Supreme Court ruled. But if the coffee break hadn't been part of her job "contract" the decision might have been otherwise.

HERE'S PROOF THAT DU PONT IMRON(TM) CUTS FLOOR MAINTENANCE COSTS

Ruinous combinations of oil and grime, heavy traffic and high humidity played havoc with floor maintenance costs at Chatham Manufacturing Company, Elkin, N. C.—until all six acres of wood floors were refinished with IMRON. Now, the company reports, floors resist scuffing, abrasion and moisture, retain a high gloss and shed lint far better than ever before. Moreover, in-plant tests (above) show a much longer life expectancy for IMRON than for regular finishes! As a result, their floor maintenance costs have been reduced to a minimum.

IMRON regularly outlasts conventional varnishes of good quality a minimum of 2 to 3 times over. A single-package, oil-free urethane clear, it possesses wearability and protective characteristics not found in Alkyd, Phenolic or Epoxy floor varnishes. Almost colorless when applied, it *stays* light and pale. And you can apply the first coat on an off-day morning, the second coat that afternoon, let full traffic back on by midnight! For complete information, clip and mail the coupon *today*.

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LET'S KEEP

Business Help For Our Colleges Going Full Speed Ahead

"Should our company fold up its program of financial help for higher education now that the Kennedy Administration plans to have the federal government provide this kind of help in a big way?" It is clear why, in the light of campaign promises and plans announced since, this question is being raised in many business firms at this juncture.

What seems far clearer, however, is the right answer to the question. It is a resounding NO! **This is no time for the business community to ease up in what have been its notably successful efforts to help our colleges and universities get out of the deep financial hole in which they are operating. On the contrary, this is the time to put more steam than ever behind the drive of business to increase its financial help for higher education.**

Massive Help Needed

It is easy to understand why any individual businessman or firm might have a rather despairing feeling about the prospect of competing with the federal government, with its almost all-embracing tax arm, in providing financial support for higher education or almost anything else for that matter. But this is not a case of competition. It is a case where our colleges and universities must have massive help all along the line if they are to be put squarely back on their feet financially—a goal of crucial and perhaps decisive national importance. **The business community will continue to have both the opportunity and the obligation to keep on increasing its help for higher education as rapidly as possible.**

To underline this proposition take a look at the chart at the top of the next page. It shows how far the salaries of college and university faculty members continue to lag behind those of other occupational groups in the U.S.A. There has been some relative improvement in the average of faculty salaries in recent years. And the salary improvement in some fields, such as those of science and mathematics, has been very pronounced. But the chart makes clear how badly the average salary of college and university faculty members still lags.

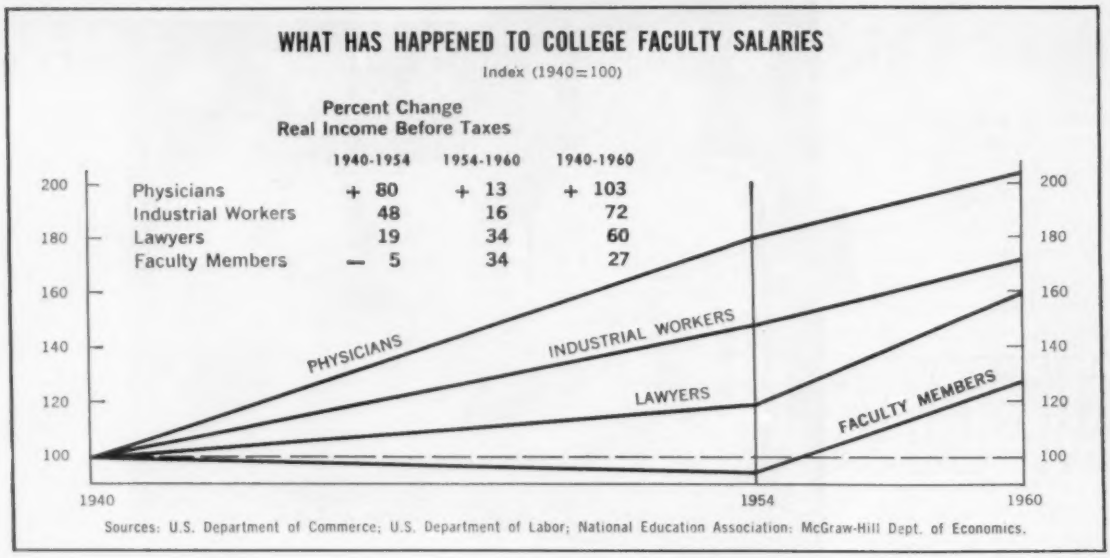
No Federal Funds For Salaries

The plans for increased financial aid for higher education, proposed by President Kennedy, do not contemplate increased expenditure for faculty salaries. This, we believe, is wise whether or not you feel, as many do, that resort to this kind of federal financing would inevitably carry with it federal controls that would ultimately undermine academic independence. The fight over federal appropriations for faculty salaries would be so long and bitter that it would be destructive to the aid program as a whole.

However, what the federal government will not be doing to remedy the deplorable condition of faculty salaries, as reported by the chart, is one indication of the tremendous scope that remains for crucially important help for higher education from business. Manifold other indications are available.

Disaster Escape Route

One of these indications is provided by the careful calculation that the annual income of our colleges and universities must be increased by about $4½ billion (from about $4½ billion to about $9 billion) over the next eight years if the tremendous wave of students



now gathering to descend on these institutions is not to wind up in both a financial and an educational disaster. This wave promises to add more than 2.5 million, or 75%, to college enrollments by 1970.

Thus far, the program for financial help for higher education by business, spearheaded by the Council for Financial Aid to Education, has been a remarkable success in all dimensions. The dollars contributed have increased rapidly—from about $100 million five years ago to about $150 million this year. Contributions of $500 million a year by 1970 are a clear possibility.

One of the inspiring developments increasing this possibility stems out of Cleveland, Ohio. There through their chief executives, an imposing group of business firms have established one per cent of their profits before taxes as their minimum goal for contributions to higher education, to be reached within three years. General acceptance of this goal by business would go most of the way toward getting our colleges and universities firmly on their feet financially.

Mutual Respect Increased

The mutual esteem of the academic community and the business community, an element of enormous importance to a free society, has been increased by the manner in which the program of financial aid has been carried out. In making its contribution, there has been no attempt whatsoever on the part of business to encroach upon the academic freedom of the institutions financially benefited. And the program of financial aid has greatly increased the knowledge, understanding and respect which the colleges and universities and business have for each other.

The Kennedy Administration's program to enlarge federal financial support of higher education is certain to arouse strenuous controversy. As proposed by its Task Force, it avoids some of the most controverial areas of principle. However, the very magnitude of the proposed extension of the federal government's already vast program of financing higher education involves fighting issues.

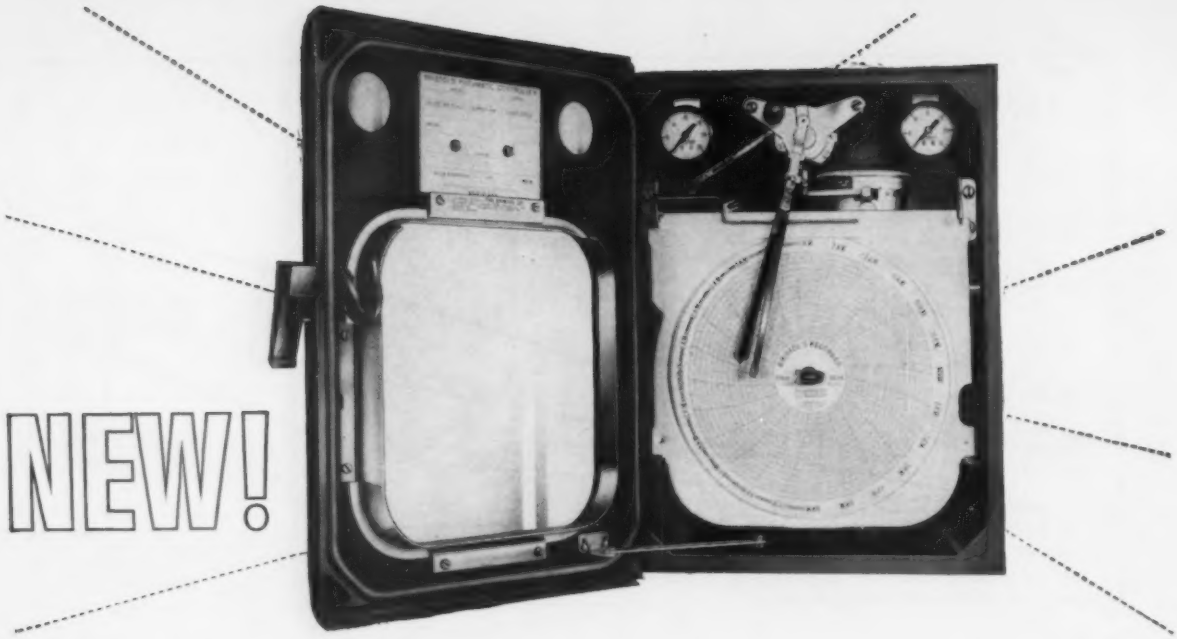
But if the enlargement of federal aid were to be deeply discouraging to the continued expansion of private aid for higher education, it would be a national misfortune of major proportions. There is no good reason why it should be. On the contrary, there is compelling reason for the business community to continue giving higher education all the financial help it possibly can, thus speeding onward a program that has been and continues to be a major constructive force for our colleges and universities, for business and for the nation.

This message was prepared by my staff associates as part of our company-wide effort to report on major new developments in American business and industry. Permission is freely extended to newspapers, groups or individuals to quote or reprint all or part of the text.

Donald C. McGraw

PRESIDENT

McGRAW-HILL PUBLISHING COMPANY



Bristol Series 532 A/D* pneumatic recording controller is outstandingly SIMPLE, RELIABLE, and STABLE

- **Simple modular design for ease of servicing**
- **High control stability for closer process control**
- **Designed for batch-type and continuous processes**
- **Proportional, proportional-plus-reset, and proportional-plus-derivative control models available**

Top control performance with maximum simplicity plus standard Bristol precision measuring elements—those are the key features of the Bristol Series 532 Recording Controller. The 532 uses the same renowned elements that have earned such a reputation for accuracy and dependability on other Bristol automatic controlling and recording instruments—perfected through wide experience and many years of development.

Self-contained modular design of the control unit speeds servicing. The whole modular unit, consisting of an aluminum casting with working parts made of stainless steel, Ni-Span C, and Neoprene diaphragms, can be removed by taking out only two screws and a link.

The die-cast aluminum instrument case (15¾ x 10¾ x 5¾ overall) presents a streamlined appearance and is completely dustproof and weatherproof.

Write for complete data on the new, versatile, economical 532 A/D. The Bristol Company, 103 Bristol Road, Waterbury 20, Conn., a Subsidiary of American Chain & Cable Company, Inc. 0.46

ACCO

CONTROL UNIT CHARACTERISTICS:

PROPORTIONAL BAND: 0-400% continuously adjustable, direct- or reverse-acting.

RESET: 0.1 to 100 repeats per minute.

DERIVATIVE: 0 to 10 minutes derivative time.

AIR PILOT: Non-bleed type.

PILOT CAPACITY: Over 3.0 scfm.

FREQUENCY RESPONSE: Essentially flat to 300 cycles per minute.

TEMPERATURE STABILITY: Less than 0.1% change in the output pressure for 90°F temperature change.

CHART: 8" diameter; wide variety available.

MATERIAL: Aluminum housing; 316 stainless steel internal parts; Ni-Span C feedback element.

RECORDING CONTROLLERS OFFERED FOR:

PRESSURE AND VACUUM: Ranges from full vacuum to 15,000 psi.

TEMPERATURE: Ranges from—100°F to +1000°F.

FLOW AND DIFFERENTIAL PRESSURE: With mercury-type manometer and dry-type differential unit.

LIQUID LEVEL: With bulb unit and mercury manometer and dry-type differential unit.

HUMIDITY: Zero to 100% relative humidity.

**Advanced Design*

BRISTOL ...for improved production through measurement and control

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

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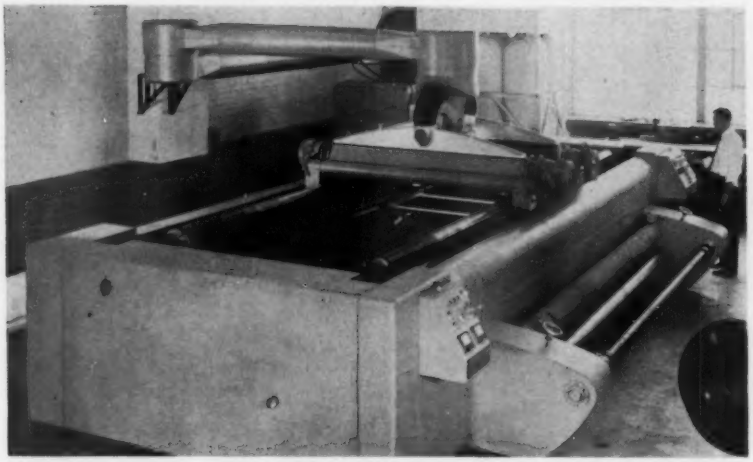


Shearing Carpets Crosswise

A carpet-shearing machine designed by Turbo Machine Co., Lansdale, Pa., uses two cutting heads. On this unit, Model 18, the cutters traverse perpendicular to the length of the carpet. One head cuts when the unit moves to the left, the other on the return.

The shearing heads are 60-in. long rolls. Each roll operates directly from a 3-hp. motor. All other power—for traverse motion, carpet movement, etc.—is by a hydraulic system.

Cutting depth is controlled by a dial on each cutting head. Dials are graduated in 0.001 inch. Guide rolls, which extend the full length of the machine, support the carpet. Also, the carpet is guided between two sets of tensioning rolls. Each pass of the shearing head makes a 60-in. cut. Then the carpet is indexed forward 59½ inches.

A circular brush, between the shearing heads, raises the pile. The brush rotates in an opposite direction of the cut and reverses rotation as the cutting rolls move from side to side.

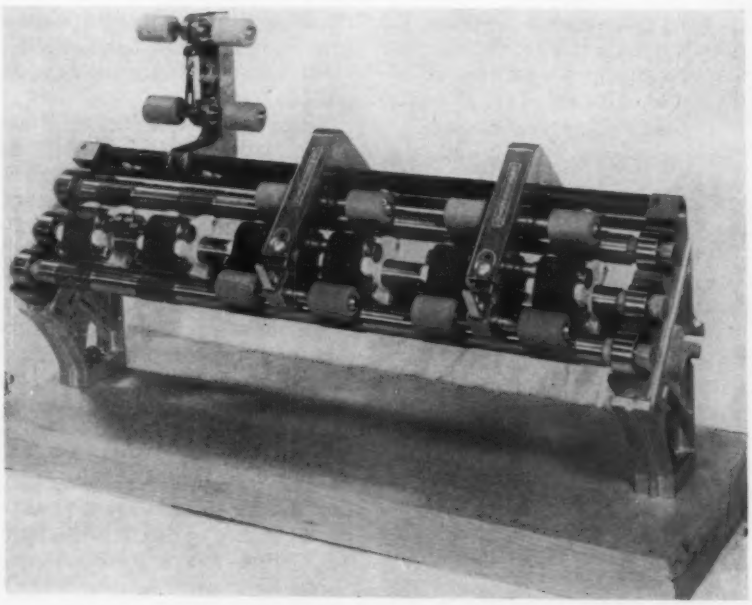
The unit is 28-feet wide, 8-feet deep. It's adjustable for any width of carpet up to 16.5 feet. **(Circle E-1 on Reader-Service Card)**

Cartridge Weighting on High-Draft Spinning

A double-apron, high-draft system, called FC, handles cotton or man-made fibers and blends. This system, developed by the Roberts Co., Sanford, N. C., uses a spring-cartridge weighting system.

The unit attaches to a bar that is fastened between roll stands. A lever is depressed to weight the rolls. System eliminates all weighting attachments to the roll beam, reducing a source of lint catching. Simple assemb'y, nylon cradles, absence of cap bars, and oil elimination in the drafting zone make this system clean running.

Drafts range from 10 to 60. Unit handles staples from $1\frac{9}{16}$ to 3 inches. For cotton the drafting weight is 72 pounds. On man-made fibers up to 3 inches long, it goes up to 100 pounds. **(Circle E-2 on Reader-Service Card)**



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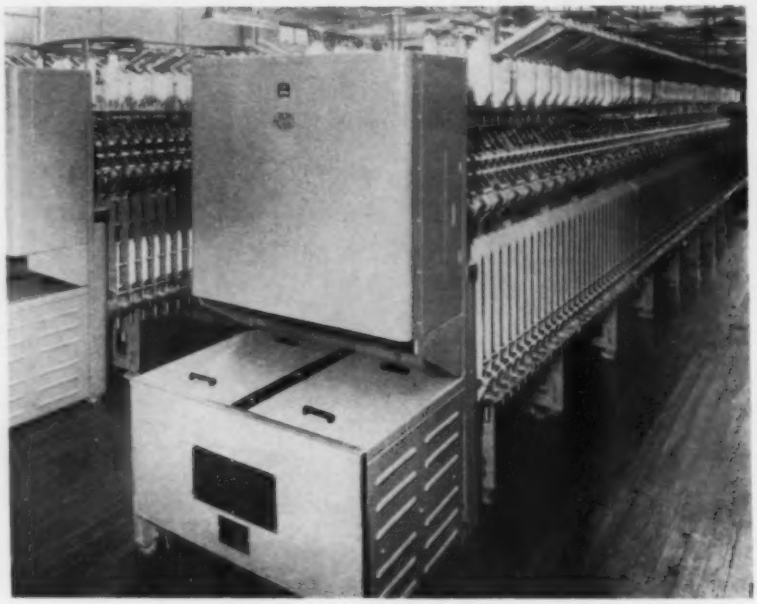
Now—It Stops Automatically



Twister, designed by J. & T. Boyd Ltd., Glasgow, Scotland, has a built-in spindle stop motion. When the yarn breaks the spindle and delivery rolls are stopped simultaneously. The stop motion acts quickly allowing the yarn to be tied behind the delivery roll.

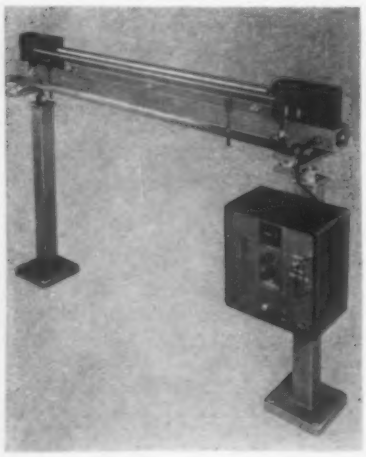
The spindle is fixed rigidly to the spindle rail. Each spindle has a positive drive from a single continuous belt.

Bobbins take a 9-in. traverse and range from 2¼- to 5-in. diameter. The unit has a narrow frame, 25 inches over the rails. Rings are self-lubricating. Delivery rolls have a positive drive. Yarn is threaded at each spindle without lifting or moving any part. Motor is reversed and pinion changed for reverse from S to Z yarn twist.

All gearing is enclosed and the covers are locked electrically. Motor is totally enclosed. Dividing plates cover the full length of the bobbin. This prevents doubling between rolls. These plates are hinged to swing out easily. **(Circle E-3 on Reader-Service Card)**

Yarn Inspector Uses Electronics

Electronic control unit for the Lindly yarn inspector, Series 1000, can be mounted remotely or attached to either leg of the inspector.



Detecting head features an Ultimat lens and a specially designed lamp. Units come for warp-beam width of 21 to 90 inches.

Three control units are available. Model 1050 detects, counts, and stops the warp for defect removal. Model 1060, a dual-level control, picks up yarn defects on two different sensitivity levels. When length of defect is important, Model 1070 is recommended.

All three units have a circuitry that uses the latest in electronic components. These units come with high-low sensitivity controls, broad-band amplifications, three degrees of frequency selection (to compensate for yarn-sheet vibration), and adjustment to detect from a single broken filament to a fluff ball. **(Circle E-4 on Reader-Service Card)**

E-5—Roving can comes without rivets. It's a vulcanized-fiber unit, made by a special process to produce a snag-proof container. Any size from 16- to 30-in. diameter is available. These roving cans are available with or without casters. William Bell Corp.

E-6 — Electrostatic instrument speeds measurement for fineness of wool fibers. The unit aligns the fibers in oil before they are measured under a micro projector. Because the fibers are aligned, the images cast by the projector can be measured quickly with a wedge scale. The instrument comes with a high voltage transformer, a sample chamber, an indicating light, a slide holder, and a cover place to protect the operator from the high voltage. Unit may have applications for measuring other fibers. Special Instrument Laboratory.

YOU'LL MAKE MONEY...

YOU'LL MAKE MONEY

When the Hunt Let-Off controls warp tension, keeps it even and constant.

YOU'LL MAKE MONEY

When the Hunt Let-Off eliminates seconds due to wavy lines, thick-and-thin places, set marks caused by loom stops to adjust tension.

YOU'LL MAKE MONEY

When the Hunt Let-Off enables your looms to weave miles and miles of perfect cloth.

YOU'LL MAKE MONEY

When the Hunt Let-Off eliminates the need for tension adjustments, reduces inspection time, makes your weave room more efficient.

YOU'LL MAKE MONEY

When you install the Hunt on looms in use, specify it on new looms from C&K or Draper.

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For complete details about the Hunt Let-Off Write, wire or phone for free booklet.

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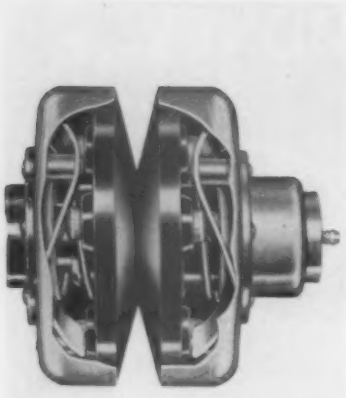
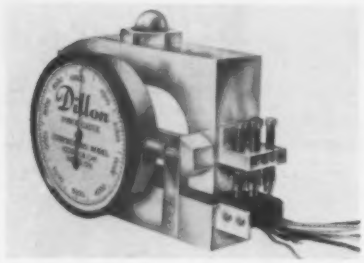


E-7—Vari-speed pulley, for wide V-belts, features cam control. Unit is rated for 1 to 5 hp. at 1750 rpm. Variable ratio goes from 3 to 1. Pulleys are available for No. 087, 12, or 14 top width, variable-speed belts. Standard bore range from ⅝ to 1⅛ inches. Hi-Lo Mfg. Co.



E-8—Force gage comes with four limit switches in compression, tension, or push-pull models. This unit is a presetting control to operate motors, bells, or lights. Capacities available are 0 to 10 pounds through 0 to 50,000 pounds. W. C. Dillon & Co., Inc.

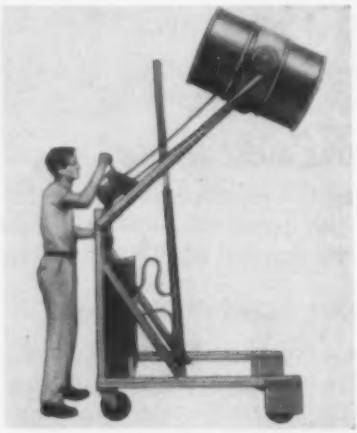
E-9—Flexible suction tube eliminates the need for permanent duct work on industrial duct collector. Unit consists of a fabric hose, lightweight pivoting arms, and highly efficient dust collecting nozzle. It comes in 3- and 4-in.-dia. hose. Torit Mfg. Co.

E-10—Air filter inflates when in use but it's shipped in a collapsed state. Each 24x24-in. unit folds to only 4-in. deep and weighs 4 pounds. Three sizes are available —24x24x36 inches (inflated), 12x-24x36 inches (inflated), and 24x24-x18 inches (inflated). The 36-in. unit is rated for 2,000 cfm. and gives 95 square feet of filtering surface. Air velocity is 21 fpm. American Air Filter Co., Inc.

E-11—Pocket radio transmitter features fully transistorized FM circuits. It operates on standard two-way communication frequencies. Unit makes it possible for field personnel to talk with dispatchers, other portables, or receivers, and to mobile radios in a regular two-way system. Transmitter can be used on frequencies between 25 to 54 mc. and 132 to 174 mc. and has 500-milliwatt r.f., power output. Nickel-cadmium or mercury cells serve the transmitters. Nickel-cadmium cells give nine-hours operation. Mercury batteries 80 hours. Motorola, Inc.

E-12—Top-feed unit for sewing machines feeds the top ply of fabrics at the same rate that the bottom ply is fed. Unit works well on wash-wear and new man-made-fiber fabrics. It can also be adjusted to feed faster or slower than the bottom fabric when required. This top feed, called J. C. Positive, fits the Singer Series 241 and 251 and the Union Special Lockstitch sewing machines. J. C. Mfg. Co.

E-13—Miniature valve works on ⅛-in. O.D. tubing. It comes in brass and Type-316 stainless steel. The forged body is only 2¼ inches high. This valve features panel mounting, colored handles (for coding), Teflon packing, and micro-regulating stem. Rated pressure is 3000 psi. at room temperatures. The orifice has a 0.080-in. opening. Unit has tube-fitting connections. Whitey Research Tool Co.



E-14—Drum lift, portable power-operated type, lifts drums from heights of up to eight feet. Unit works in areas of minimum headroom. It rolls on 8-in. wheels. Lift is available with battery-operated power packs or from an a.c. outlet. Sterling Fleischman Co.

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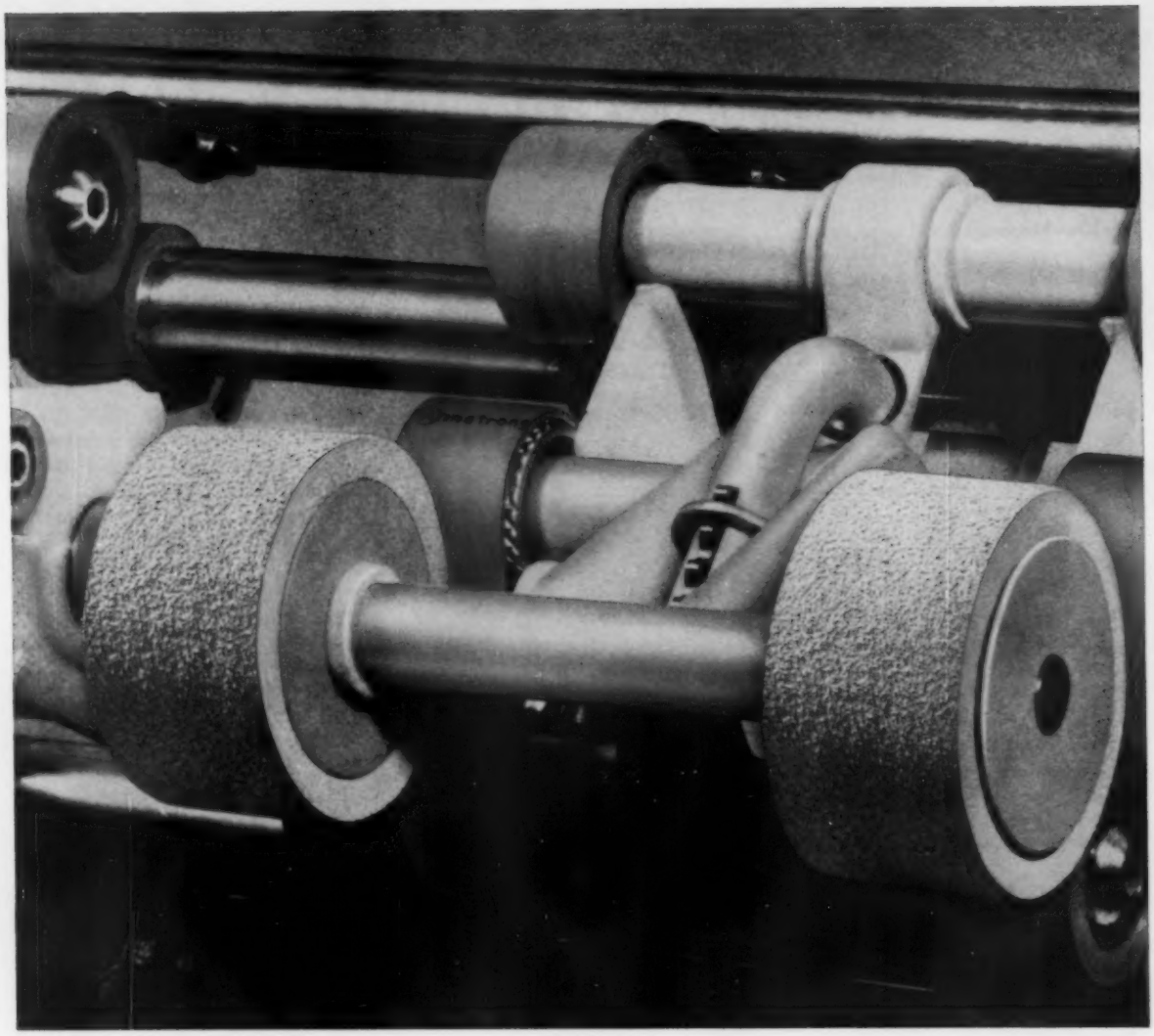

You get better cleaning, faster picking, longer life with Accotex NK-770 Clearers

Just looking at Armstrong Accotex NK-770 tells you it will do a good cleaning job. Its textured surface is designed to pick up—and hold—waste fibers.

But NK-770 gives you more than good cleaning action. Picking intervals are lengthened because waste builds up tightly and uniformly across the width of the clearer. NK-770 clearers are easier to pick, too. The waste comes off in one piece . . . and the job can be done right at the frame. No more mechanical cleaning.

In addition to these daily operating economies, NK-770 clearers last at least three times as long as conventional materials. Yet their initial cost is no higher. Compare NK-770 side by side with the clearers you are now using. Ask your Armstrong man to arrange a test. Or write Armstrong Cork Company, 6905 Dauphin Street, Lancaster, Pa.

Armstrong TEXTILE SUPPLIES

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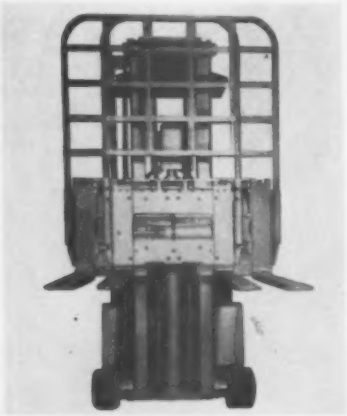
For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

E-15—Magnetic level gage features a safety design that gives protection when dealing with toxic gases or corrosive liquids. The measuring unit is inside a stainless-steel chamber. The indicating scale is mounted outside this chamber and is magnetically actuated through the chamber wall. These gages are also available with electric alarms. Pressure goes to 1,000 psi. Jerguson Gage & Valve Co.

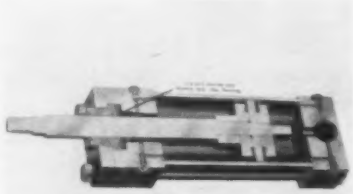


E-16—Fork-lift truck uses a side-shift mechanism for exact positioning of palletized loads. The side shifter provides a 4-in. motion to either side of center. Vehicle cuts down the need of shifting the truck for exact load placement. Lewis-Shepard Products, Inc.

E-17—Battery charger, silicon rectifier type, takes up to 10 material-handling-truck batteries at one time. Units are cooled by forced filtered air. Because of accessibility by removable front panels, the unit can be flush mounted against the wall. Battery charging is automatic and when fully charged (eight hours or less) the unit turns off. Recharging time varies with the state of the battery. The circuit gives a steady d.c. output even if the a.c. input varies ±10%. Exide Industrial Marketing Div., Electric Storage Battery Co.

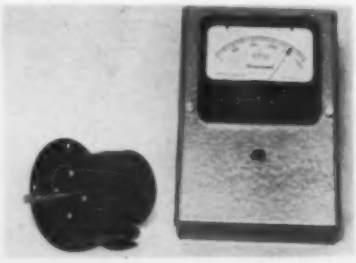
E-18—Rotary magnetic sweeper picks up steel chips or filings from floors or aisles. Unit has a 5-ft. handle and rolls on Neoprene wheels. The magnetic pickup tube is cleaned with wiper ring. A detachable collection pan, at the base, speeds unloading. Eriez Mfg. Co.

E-19—Magnet weighs only five pounds but can lift over 125 pounds. It's a horseshoe-style magnet. Uses include location of small parts on floors, underground or wall-concealed pipes, or other metal objects. Unit is rated for 2,000 gauss. Edmund Scientific Co.



E-20—Air cylinder is designed with a special piston-rod flange-seal. The seal combines the rod-flange seal and the rod bushing into a one-piece unit. This simplifies and speeds up cylinder assembly for field replacements. Miller Fluid Power Div., Flick-Reedy Corp.

E-21—Urea-formaldehyde concentrate makes the manufacture of urea-formaldehyde resin economical. These concentrates produce resins for use in a variety of industries such as textile, protective coating, and paper. Three types are available: UFC 7626 is a pumpable liquid of 76% solids with a formaldehyde content of 43%. UFC 7147 is a clear, low-viscosity liquid with solid contents of 71% and total formaldehyde content of 50%. UFC 8545 is similar to UFC 7147 but at a higher concentration—85% solids. Hercules Powder Co.



E-22—Tachometer indicating system uses a d.c. generator and precision indicating meters. You can mount the generator to the motor by direct-shaft coupling or by pulleys. Special circuits provide automatic, multi-scale selection systems. Electro-Devices, Inc.

E-23—Topping for concrete floors is a two-component mortar. The binder is a liquid-latex dispersion, and the filler is a dry-cement aggregate. Conventional mortar boxes or concrete mixers are used for mixing. This topping can be used to lay complete floors or patch old cement. It works on old wood or over steel. Normal traffic areas need only ¼-in. thickness. Drying time is 24 hours for the thin coatings and 48 to 72 hours for machine mounts. Peak performance is obtained after three days on any thickness. Pennsalt Chemicals Corp.

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"Made OF Stainless Steel ...Made BY Jenkins"

Valve Performance Shows the Big Difference in that Spec!

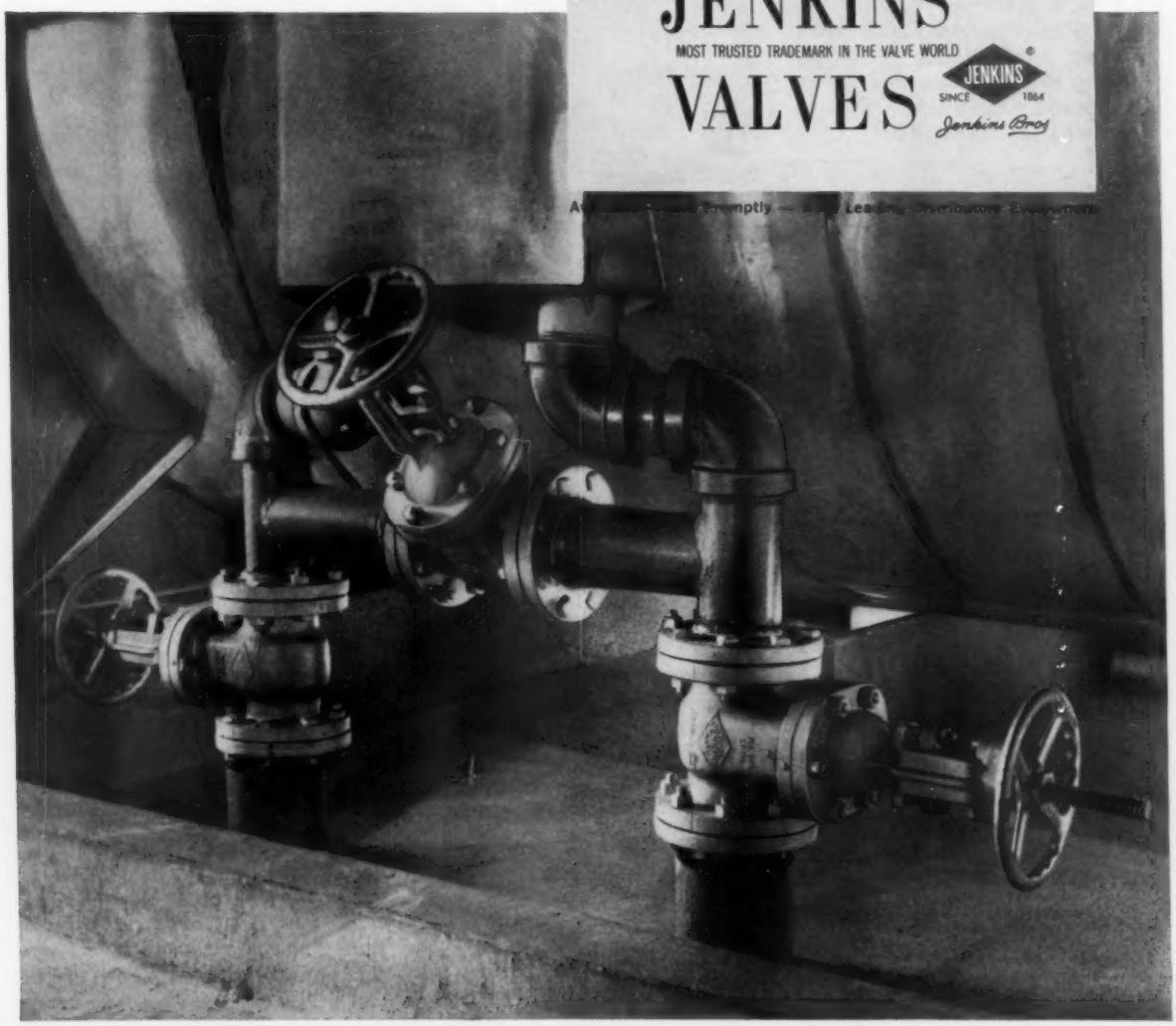
When service conditions require valves of Stainless Steel, remember that metal is only part of the answer to long, dependable valve performance.

The WAY valves are made is equally important. Factors you can't even see make a big difference. Such factors as *perfection of castings . . . precision machining . . . painstaking inspection and testing . . . sound design.* Most important of all: *the maker's guiding policy about quality.*

To be sure about all these critical factors, experienced specifiers and buyers specify JENKINS as well as the metal alloy when Stainless Steel valves are needed. It is well-known that for almost a century Jenkins has made valves to *just one* standard of quality . . . the highest. At Jenkins every operation, every worker is aimed at fulfilling that standard, whatever metal a valve is made of.

SEND FOR NEW CATALOG 59-SS of Jenkins Stainless Steel valves in types and alloys to satisfy most needs. Jenkins Bros., 100 Park Ave., New York 17.

JENKINS
MOST TRUSTED TRADEMARK IN THE VALVE WORLD
VALVES



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Equipment and Supply News

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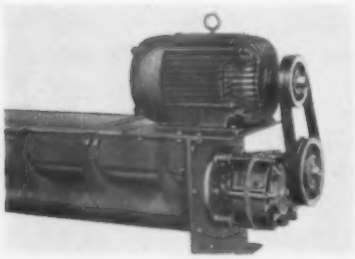
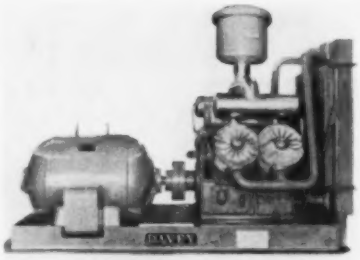


E-24—Screw-conveyor drive is specially designed for short conveyor flights and low hp. requirements. The drives are offered in two speed ratios: 8:1 for up to 6 hp. at 225 rpm. and 18:1 for up to 3.8 hp. at 100 rpm. The unit consists of a double-reduction speed reducer with packing gland and driving shaft that mounts on the trough end. Heat-treated gears assure long life. Dodge Mfg. Corp.

E-25—Relays designed to control small self-protected electric motors up to ¾ hp. The relays can also be used with other power devices and are rated at 600 v. and are also available with 6, 12, 24, 115, 230, 440, and 550-v. coils, 60 or 50 cycles. General Electric Co.

E-26—Fiberglass processing vessels provide corrosion resistance with self-supporting strength. Unit weighs less than stainless steel. Precision molds are used which give a glass-smooth inner surface. The tank is translucent so that the liquid level is visible. All tubing and fixtures are corrosion resistant. Unit comes in capacities from 50 to 70,000 gallons. Jones & Hunt, Inc.

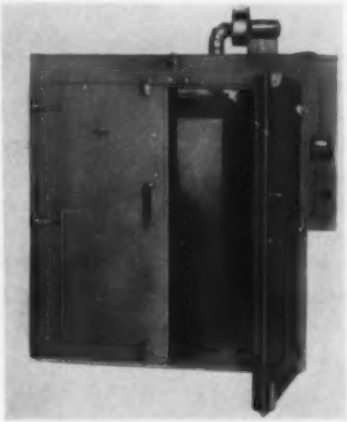
E-27—Miniature directional valves are designed for oil hydraulic systems. They work on small volume systems used for jig positioning and clamping, hydraulic gear shifting and clutching, and venting on hydraulic relief valves. Valves operate at 1000 psi. at a capacity of 2 gpm. It's a 4-way valve with single and double solenoids. Solenoids are a.c. or d.c. in all standard voltages. Vickers Inc.



E-28—Air compressor features individual cylinders made of nickel-iron alloy. Both single- and two-stage units are available. Ratings range from 7½ to 150 hp. Units operate on direct or V-belt connections. The single-stage compressor gives 50-psi. continuous pressure. The two-stage unit gives 125-psi. continuous pressure. Automatic start-stop or dual controls are available. Davey Compressor Co.

E-29—Tape dispenser, called Strap-It 4W, works on 2-in.-wide tape. Unit is hand operated. It dispenses, applies, presses down, and cuts tape in one operation. After cutting, a free end remains as a self-starter. Dispenser holds up to 120 yards of tape. Permacel.

E-30—Booted universal joint uses a Neoprene cover that allows the joint to be prepacked with grease. Working angle goes to 40 degrees. Units range from ⅜- to 2½-in. O. D. Horsepower goes to 120 at 1,500 rpm. Lovejoy Flexible Coupling Co.



E-31—Truck oven, for heat treatment of textiles, has 252 cubic feet of unobstructed work area. Unit heats to 500 F. High velocity blower distributes air uniformly through built-in ducts. Double door permits maximum loading. Controls include an indicating-controlling thermostat, over-temperature limit switch, and pilot light mounted on a panel. Shelving, door windows, and temperature range is optional. Construction is finished aluminum except for a ¼-in. steel floor. Unit is 72x72x84 inches. Electric Hotpack Co., Inc.

E-32—Electronic converter translates records on magnetic tape from IBM or Univac language to Honeywell language. This tape works on Honeywell EDP systems. Savings as high as 250% are realized when converting the tape. Minneapolis-Honeywell.

E-33—Flex valve operates automatically. It works on slurries or corrosive materials where manually operated valves would be inaccessible. Sizes range from 1 to 12 inches in slip-on or flange type. The flex valve absorbs vibrations and is not affected by water hammer. It will not freeze. Body materials include pure gum rubber, Buna-S, Buna-N, Neoprene and Butyl. Farris Flexible Valve Corp.

. . . *Turn to page* 144

ANOTHER LEADING PRODUCER from REINER...

the Menschner

HIGH SPEED DOUBLING, MEASURING AND ROLLING MACHINE

It is with pride that Reiner offers this efficient, economical producer—ideally suited for both woven or knitted cloth. Available in various widths up to 130" for open goods (finished goods are doubled and rolled to 65" width). Larger widths can be furnished upon request.

SPECIAL FEATURES:

- 3-Speed drive permits large range of speeds for adaptability to various fabrics.
- Goods can be handled from either folded condition, loose scray or from rolls.
- Machine gives unmatched performance and accuracy even at high speeds.
- No experienced help required for operation of unit.
- Machine prints yardage after each run—insuring accuracy, and eliminating chance for error.

ALSO AVAILABLE is a Guider for Self Doubling (Model S. D. IV) which aligns selvages automatically.

Write for complete details and interesting case history regarding actual mill use of this machine.

THE REINER LINE:

Tricot Machines 2-3-4 bars—Jacquard Raschel Machines—Tulle Machines—All Types of Warpers, Beamers and Creels—Warp Knitting Hosiery Machines—Schaffhouse Flat Power Knitting Machines—Electro-Pneumatic Schiffli Embroidery Machines (10 and 15 yds.)—Multihead Automatic Jacquard Embroidery Machines—Automatic Bobbin Winding Machines (for stitching and quilting)—Jacquard Pattern Repeating Machines—Reiner Fematex Tenters—Menschner Shears; Selvage Trimmers; Gauged Doubling, Measuring and Rolling Machines; Printing, Marking, Sizing and Back Coating Machines; Combining, Palmering, Calendering and Sueding Machines—Gerber Wet Finishing Machines—Conorapid Cross Winders—Suma Rubber Thread Covering Machines—Sigel Slub Catchers—Ready Spare Parts Service for all Reiner Machines.

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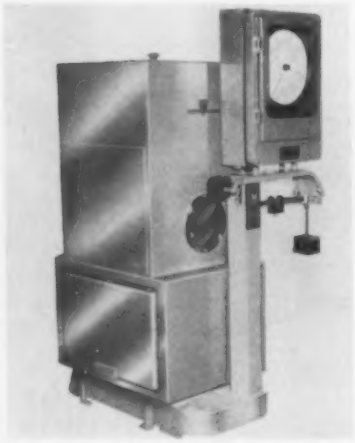
An Honored Name in Textile Machines Since 1903

Equipment and Supply News

. . . *Begins on page* 135

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

E-34—Power cylinder mounting permits fast installations. It provides side-mounted cylinders with a flange plate that extends beyond the mounting surface of the cylinder. It's available with side lug, flush side, or end lug. Miller Fluid Power Div., Flick-Reedy Corp.



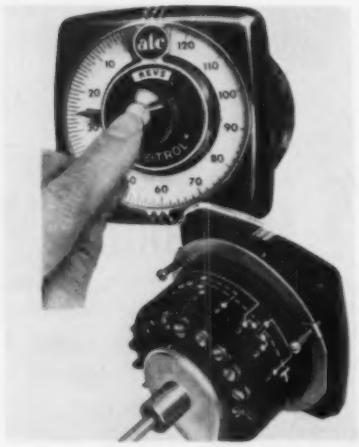
E-35—Chemical feeder, with a loss-of-weight recorder, controls dry-chemical flow and makes a permanent record of the feeding operation. An adjustable knob sets the feed rate between 0.0045 to 2.8 cubic feet per hour. To prevent flooding, a screw-type feed section is used. Built-in diaphragm agitators prevent arching of the chemical in the feed hopper. Wallace & Tiernan, Inc.

E-36—Rotary vane feeder and air-locks have cast-iron housings and fabricated-steel rotors. Aluminum rotors also available. Units come in 6-, 8-, and 10-in.-sq. inlets. Air-locks, with cast-iron bodies, are available in 3- and 4-in.-dia. pipe. Young Machinery Co.

E-37—Face mask offers protection against acid spills, chemical sprays or foreign particles. It protects the eyes, face, and under chin area but offers unrestricted vision. Unit is 16x9 inches with a 0.040-in.-thick visor. General Scientific Equipment Co.

E-38—Compact limit switch has a built-in indicating lamp. Designated Model 1LS501, it's completely sealed in an aluminum housing. The forged-aluminum switch arm comes with a hardened steel roller. For mounting, the housing has four tapped holes. Also available for conduit connection with a ½-14 NPT thread opening. Unit is rated for 10 amps, ½ hp. at 120-v., a.c. Minneapolis-Honeywell.

E-39—Slurry pump, Series JC, approximates the efficiencies of clear-water pumps. Units come in three bearing frames with sizes from 1 to 4 inches. Shaft sleeve is stainless steel. The impellers are threaded to the shaft for shaft-end protection. Morris Machine Works.



E-40—Revolution counter gives automatic control for machines or process equipment. Unit is coupled directly to a rotating shaft which operates at any speed (constant or variable) up to 2,000 rpm. Repeat accuracy is ¼ of 1% of the dial range. Models available range from 0-12 to 0-6,000 revolutions. Once the pointer is set, a pushbutton starts the operation. After the shutoff the pointer resets and is ready for repeat. Operating torque is 1¼ inch-ounces. Unit works for batch or single function cut-off applications. Automatic Timing & Controls, Inc.

E-41—Automatic door operators are available in three types under the Air-Lec brand name. The openers are actuated by low-voltage electric current or mechanical trip. Actual movement of the door is carried out by air and springs, which cushion any shock from obstructions and thus prevents damage to personnel or equipment. Units are flush mounted. Schoelkopf Mfg. Co., Inc.

E-42—Fast-setting cement can be used to anchor machines, overhead equipment, fixtures, railing, and beams. The cement, called Grout-ite, is mixed with water and poured around the bolt. Because the product produces its own heat, it sets up almost immediately. Flexrock Co.

E-43—Lift truck is designed for driver comfort and ease of handling. Unit has a low center of gravity for maximum stability. The Challenger Model 25 is rated for 2,500-lb. capacity at 24-in. load center. Forward-reverse selection and throttle control is by a single right-foot pedal. A Continental Y112 water-cooled engine operates the truck at a top speed of 12 mph. Hoist speed is 105 fpm. Hyster Co.

E-44—Circuit breaker provides one-third saving in panel space. Breaker comes in 2- and 3-pole construction. Rating is 125 through 800 amps. for 600 v., a.c. and 25 v., d.c. The KM unit is 15½ inches high x $4\frac{1}{16}$ inches deep. I-T-E Circuit Breaker Co.

. . . *Turn to page* 146

POWELL MAKES IT A SIMPLE MATTER

To find the right valve for pulp and paper services, just call Powell. It's that simple, since Powell offers a wide selection of valve designs and industry's most complete selection of materials including bronze, iron, steel, stainless, nickel, Monel Metal*, Hastelloy**, and Ni-resist*.

What's more, you don't have to wonder about Powell performance. It's built-in through sound engineering, development, materials and workmanship.

So, remember, finding the right valve can be a simple matter when you specify Powell Valves. For further information, call your nearby Powell Valve Distributor (there's one in every major city), or write The Wm. Powell Company.

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POWELL PAPER MILL **VALVES**

THE WM. POWELL COMPANY CINCINNATI 22, OHIO

Time was when relocating mill machinery was a costly, major operation. But no more!

With a Unisorb mounting program you can position looms for greatest efficiency today and relocate as often as desired as conditions change — at lowest possible costs. You can save up to 80% on installation time . . . save on lag bolts and screws (not needed), save floors from damage (drilling is not required).

Unisorb reduces transmitted vibration and noise up to 85% — also muffles induced external vibration.

Unisorb vibration-protected looms can be run at maximum speeds, help you realize full production potential.

Unisorb vibration and noise-protected workers do a better job, are less subject to fatigue.

Unisorb keeps machines on the level — wear and tear on moving parts is reduced. One textile mill reports, "Unisorb keeps the rolls of the machine in better alignment. The spinning frame also runs better."

Available in many densities and thicknesses for textile machine mounting. Look for the distinctive red center. For data on loading ranges and specific applications, ask your Unisorb Distributor or write direct.

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FEI-5

Equipment & Supply News

. . . *Begins on page* 135

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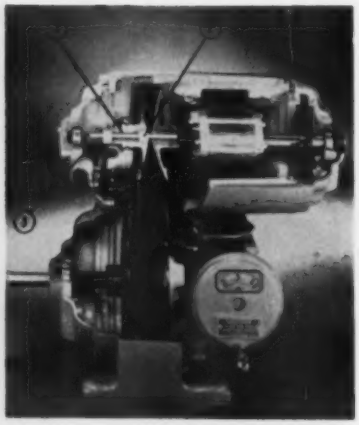
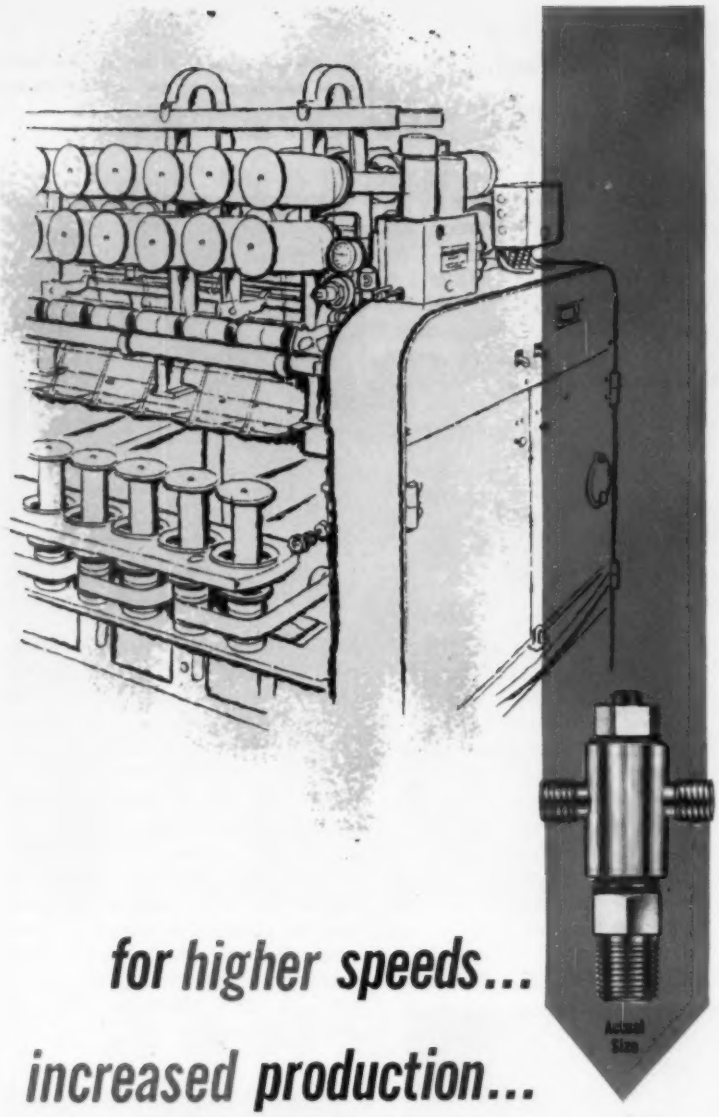


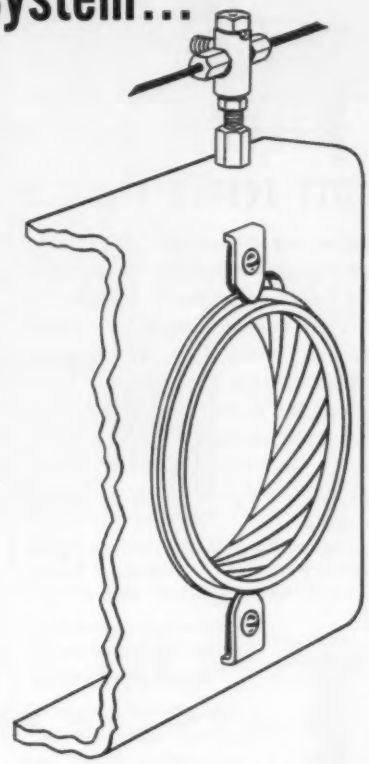
E-45—Variable-speed drive never requires lubrication. All bearings are factory-lubricated. Keys (1) are elastic material. Bushings (2) are nonmetallic. Shaft surfaces (3) are specially impregnated to eliminate the need for oil. Drives come in ¼ to 25 hp. with output ranging from 0.4 to 4660 rpm. Unit has a speed variation of 10:1. Drives are available in drip-proof, totally enclosed, fan-cooled, and explosion-proof types. Unit has convenient dial for adjusting or repeating setting of the rpm. output. Sterling Electric Motors, Inc.

E-46—Fast trash pickup, unloading, and compacting are featured on equipment now available. The machine picks up a container of trash, turns it upside down to dump in the receiver, compacts the trash and returns the container. Time—one minute. Dempster Bros.

. . . *Turn to page* 148



New Adjustable Accumite® Ring Lubrication System...



for higher speeds... increased production... less product spoilage...reduced power costs!

When you order new spinning or twister frames (or just new rings), specify Alemite's new adjustable Accumite System for increased production and lower costs. This accurate, economical, low-pressure lubrication system assures automatic ring lubrication while the machine is in operation. Adjustable measuring valves meter exact amounts of refinery-clean lubricant to every ring on the frame rail.

Because an Accumite System maintains a constant, proper lubricant film, it assures even tension and uniformity of thread. It virtually eliminates product spoilage due to over lubrication – eliminates drip and spray. The Accumite System reduces lubricant consumption and prolongs ring life at higher operating speeds.

Send for all the facts on the Alemite Accumite System – important production tool of the textile industry!

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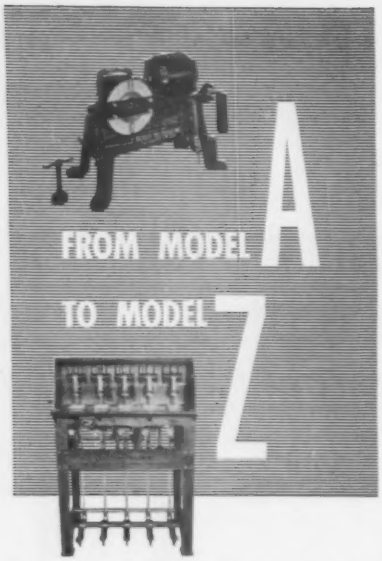

SCOTT TESTER SERVICE

Whether you own a Scott tensile tester, a Scott Mooney Viscometer, or *any* other Scott Tester equipment . . . you can now get *certified* maintenance at very reasonable cost *anywhere* in the continental U. S. and Canada. Take advantage of the latest factory know-how and techniques to keep your testing equipment working properly and economically. Scott field men offer complete A to Z service, including:

• Inspection • Adjustment • Calibration • Minor Repairs • Work Report • Certificate of Calibration (often required on Government contracts)

Select either of two Scott Tester service plans:

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Regularly scheduled service trips are made from Spartanburg, S. C. and Providence, R. I. on a fixed fee basis.

(2) INDIVIDUAL SERVICE PLAN

For immediate service, or when service is required other than during scheduled group trips. Special rates quoted upon request.

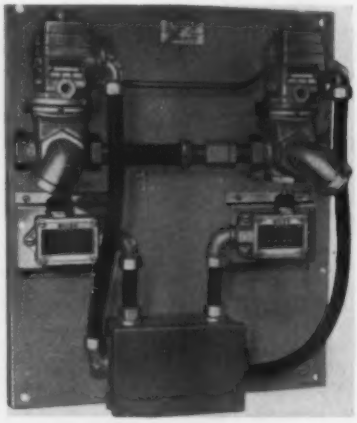
(NOTE: Models CRE, ACCR-O-METER, STI and RMA are serviced only on special order.)

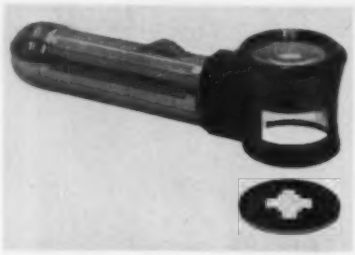
Write or call for complete information. Scott Testers, Inc., 95 Blackstone St., Providence, R. I.

SCOTT TESTERS

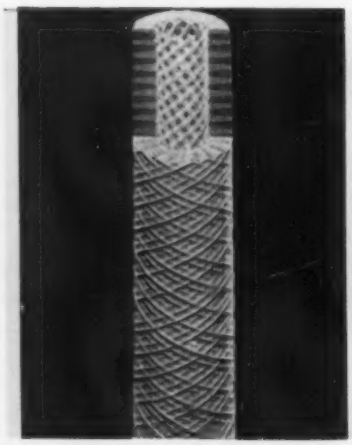
THE SURE TEST . . . SCOTT!

E-47—Air-cooled condenser for air conditioning and refrigeration has vertical or horizontal air flow. Unit comes in 19 sizes ranging from 7½ to 100 tons. It has a low profile design. Automatic head-pressure control is available for year-round operation. McQuay, Inc.



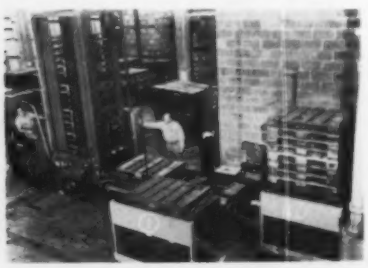


E-48—Illuminated magnifier comes with a textile-counting plate. Unit is available as a battery-operated or electric model that operates on a.c. or d.c. Magnification is 5X or 7X. Pick counter permits measurements at ⅛, ¼, ½, or 1 inch. E. W. Pike & Co., Inc.



E-49—Filter tube uses a disposable polypropylene core. This core has good acid resistance and is less expensive than other types. Designed with a special braided-type structure, the core gives maximum support, without restricting the flow capacity. Filterite Corp.

E-50—Dual-valve interlock works on machines having air-actuated clutches. This control system comes with two 3-way valves, connected in series; two limit switches, controlled by the poppet extensions of the valves; and a wiring enclosure with a terminal strip. Unit is prewired and mounted on a steel panel. Built-in safety feature is designed so that if one valve becomes inoperative the machine is stopped. These assemblies come with ⅜- or ¾-in. valves and use 115, 230, or 460-v., 60-cycle a.c. Minneapolis-Honeywell Regulator Co.



E-51—Automatic pallet-inspection system saves time and dollars by reducing waste caused by damaged pallets and catching repairable pallets before they get beyond repair. Unit allows the operator to inspect the top and bottom of each pallet. He can then dispatch the inspected pallet to a stacker for repair. Or he sends the good pallet onto another stacker for immediate use. Alvey Conveyor Mfg. Co.

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YOUR **WARPS**
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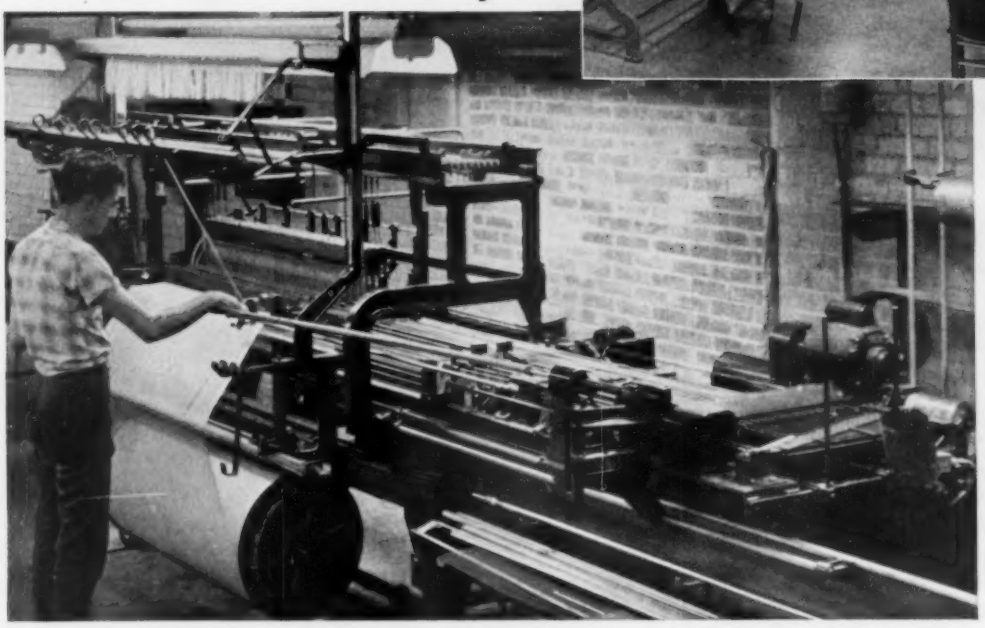

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With this machine, the time-eating task of drawing-in is speeded up tremendously. A power-driven needle, running at 127 to 230 strokes per minute (depending on the number of weaving elements to be entered), draws each thread in succession through the correct selection of drop wire, heddle, and reed dent. This correct selection is made accurately *and automatically* for each pick by a sequence of mechanical actions controlled by a pattern strip punched in accordance with the designer's draft. Very substantial reductions of drawing-in costs are possible, particularly on patterned goods such as stripes, plaids, and fancy weaves. This *modern method* of replacing warps has enabled many mills, both large and small, to meet the ever-increasing demands for a greater variety of patterns. *Your Barber-Colman representative is qualified to advise you on possibilities in your mill.*

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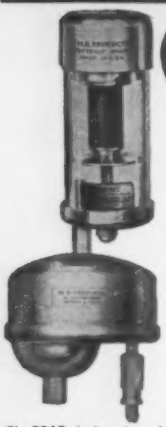

M-B

AUTOMATIC WHIRL-A-WAY AIR LINE FILTER MODEL W-1 and TRAP

RIBBON TYPE FILTERING UNIT removes solids .00039 and larger. Transparent plastic bowl makes filtered foreign matter visible. Gives maximum protection to all types of Lint blowers, Blow-off Hoses and various air-operated controls.

The TRAP ejects water automatically. Operates upon accumulation of 3 to 4 ounces. Discharges in less than 5 seconds. Assures dry air in pneumatic system at all times. Non-corrosive throughout.

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Once a man feels the urgency to learn, it's remarkable how he finds the time and place to do it.

If he had to spend countless hours seeking out that which would be most useful in his work, the going might be rough. But, happily, this herculean task has already been accomplished by McGraw-Hill specialized magazines that span almost every field and function.

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TEXTILE MACHINERY & AUXILIARY EQUIPMENT

L-1—Tension control is covered in 2-color, 4-p. bulletin. Describes control equipment, lists design and operation features. Includes photos of equipment and applications. Mount Hope Machinery Co.

L-2—Roving frame, new design concept, is detailed in 14-p. brochure. Cutaway drawings show details of spindle, flyer, tandem differential, and draft gear. Saco-Lowell Shops

L-3—Power-transmission equipment (sheaves, pulleys, belts, sprockets, chains, couplings and bearings) are listed in 24-p., 2-color catalog. Chart shows available part numbers. Browning Mfg. Co.

L-4—Jet-cooking system is discussed in 20-p. publication. This booklet describes latest applications for processing starches. Each unit is tailored to specific requirements. A. E. Staley Mfg. Co.

L-5—Metal products for textiles is shown in 20-p., 2-color manual. Photos display products made to order and equipment used to make these items. Chart lists decimal equivalents. Jenkins Metal Shops

L-6—Auto-calibrator is related in Bulletin Series YI, No. 9. Three pages punched for looseleaf binder. Items discussed are power requirements, cabinet size, and control features. Foster Machine Co.

CHEMICALS & SUPPLIES

L-7—Adhesives, coatings, and sealers are related in 54-p. catalog. This 9x11 booklet lists military specifications, definitions, applications, and corresponding 3M item. Minnesota Mining & Mfg. Co.

L-8—Epoxy enamel, chemically resistant, is explained in 4-p. folder punched for looseleaf binder. Details include composition, application, coverage, drying, and colors. E. I. du Pont de Nemours & Co.

L-9—Silicones, their applications as release agents, are fully related in 16-p. booklet. Covers laboratory coating techniques, test methods, and cleaning of equipment. General Electric Co.

L-10 — Corrosion-proof cements are explained in 12-p. bulletin. Relates description of cements with their uses. Tables list physical properties and resistance for corrosives. Atlas Mineral Products Co.

ENGINEERING

L-11—Oilless bearings listed in 12-p. Catalog No. 511. Includes I.D., O.D., length, and part numbers for both cylindrical- and flange-bearing types. Three-hole punched. Arguto Oilless Bearing Co.

L-12—Heating units illustrated in 2-color, 16-p. Catalog No. F-975D. Photos show uses for office, industry, and home. Charts for each use list heating capacity. Edwin L. Wiegand Co.

L-13—Centrifugal pump is completely illustrated in 3-color Bulletin No. 725.8. Includes photos, cutaway drawings, construction details, and specification charts. Goulds Pumps, Inc.

L-14—Counters are feature of this 8-p., 2-color catalog. Describes stroke, revolution, electric, and predetermined types. Contains photos, specifications, and price list. Durant Mfg. Co.

L-15—Spiral bevel gears are fully illustrated in a new directory. Included are specifications and standards for stock gears. Also gives de-

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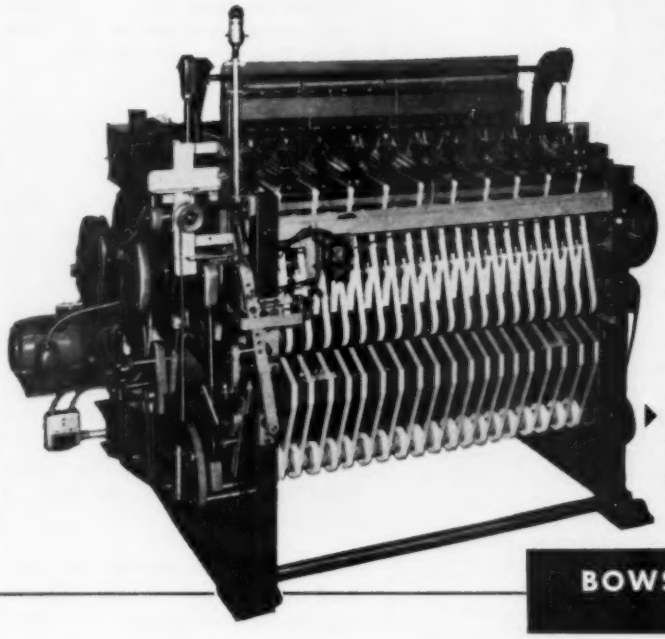
● *A breakthrough in economy . . .*

BOWSER NARROW FABRIC LOOM



- Stops automatically when filling breaks or quill runs out
- Stops automatically when warp thread breaks
- 200 to 250 picks per minute cruising speed
- Overall height only 47"
- Eliminates overhead harness straps and cams
- Less downtime, fewer shuttles out of service
- Simplified construction, 98% of parts move on ball bearings

Inquiries are invited regarding the Bowser Loom which revolutionizes the narrow fabric field due to its technical advances, high production, greater efficiency and lower labor requirements.

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The Maharajah of Mygosh, one of the world's wealthiest men, reads while riding an elephant.

"It gives my brain a real jog," he says. But elephants are expensive, and eat a lot. Besides, all that your engineers and managers really need, to do more business reading, is an encouraging word from you. Remember, a good place to read is a good place to think . . . and if you pay engineers and managers to think, encourage them to do more reading. Like so many successful men who read their "most useful" McGraw-Hill publications, they'll find the best place . . . home or plant, office or hammock. But wherever they read, remember, you share in the rewards.*

**Yes, when they read, you profit, too. Write on your business letterhead for a personal copy of booklet, "The McGraw-Hill Engineered Reading Program."*

the NEW Model FDA-RC

Fade-Ometer®

Exposure conditions can be varied to provide good correlation with either the Daylight or Sunlight exposure methods.

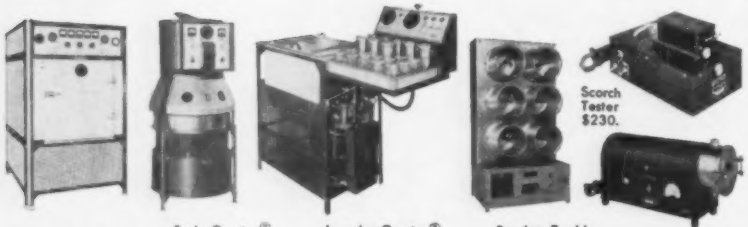
As the two natural light methods on moisture sensitive materials can produce wide variation in colorfastness ratings, it would be expected that two different exposure conditions in the Fade-Ometer would be necessary to duplicate them.

To simulate the day and night cycling of the Daylight method where the specimens are left in the cabinet 24 hours a day, new conditions of higher relative humidity during alternate periods of light and darkness are utilized in the Model FDA-RC.

The new Fade-Ometer may also be operated under the standard conditions for the FDA-R to duplicate the Sunlight method where the specimens are placed in the cabinet only between 9 and 3 on sunny days.

Added new features include an electrically operated atomizer, combination Cycle Meter and Time Switch, and modification of the electrical circuits to permit operation of the components during the light-off period.

All Model FDA-R Fade-Ometers now in use may be easily converted into the Model FDA-RC. *Write for full details on either a new machine or on conversion of present equipment.*



Weather-Ometer® $2755 up.

Fade-Ometer® $1350 up. Complete with supplies.

Launder-Ometer® $875 complete with accessories and supplies.

Random Tumble Pilling Tester $485 to $890.

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Sales representatives in principal cities throughout the world

NEW LITERATURE

. . . *Begins on page* 150

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sign and buyers' guide. Perkins Machine & Gear Co.

L-16—Stop-Nut Manual No. 6101 includes 12 tables listing installation torque values. Discusses selecting torque and effects of lubricants. Tables on bolt strength. Elastic Stop Nut Corp. of America.

L-17 — Variable-speed drives are described in 88-p. Catalog No. G-100. Freely illustrated with application photos. Includes rating tables and charts. Reliance Electric & Engineering Co.

L-18—Precision switches are covered in this 20-p. catalog. Photos and descriptions of over 200 types —miniature, lighted pushbutton, limit, and mercury. Minneapolis-Honeywell Regulator Co.

INSTRUMENTS & TESTERS

L-19—Temperature controllers and indicators are discussed in 8-p. folder. Freely illustrated with list of specifications. Engineering drawings show dimensions. Offers ideas on modification. Fenwal, Inc.

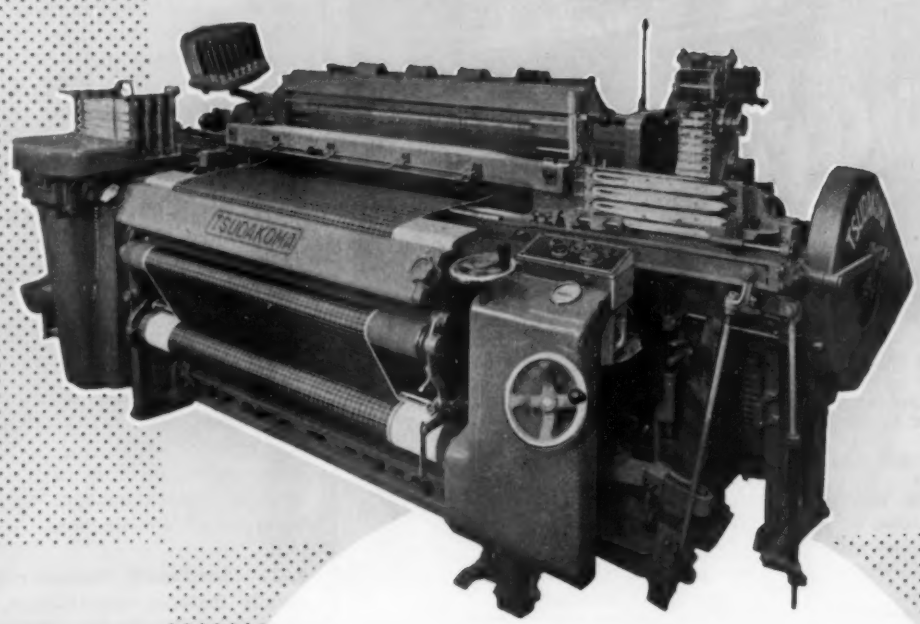
L-20—Bimetal dial thermometer is described in this 20-p., 2-color Catalog No. 155. Many photos. Charts relate model numbers, sizes, stems, and dimensions. Manning, Maxwell & Moore, Inc.

L-21—Multipoint controller is covered in 8-p., 2-color brochure. Covers design, adaptability, operating principles, accessories, and installation. Large photos enumerate uses. Thermo Electric Co., Inc.

L-22—Viscometer is discussed in Bulletin No. V-1240. Two pages, punched for looseleaf binder. Lists types available and applications. Illustrations point up operating parts. Norcross Corp.

. . . *Turn to page* 154

Tsudakoma



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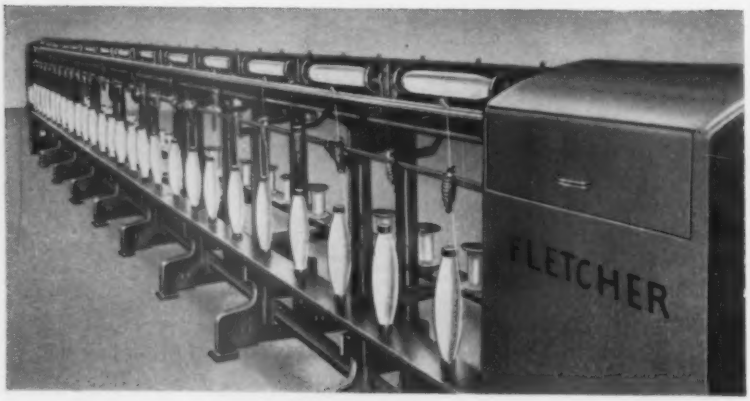

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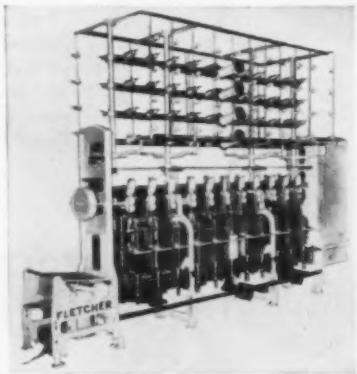

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NEW LITERATURE

. . . *Begins on page* 150

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

L-23 — Switchboard instruments are described in Bulletin GEZ-3308. Charts relate ranges, burden data, dimensions, and panel-drilling layouts. Tells how to order. General Electric Co.

MATERIAL HANDLING

L-24—Trolley conveyors is topic of 58-p. Book 2730. Fully illustrated with photos of plant installations. Diagrams relate typical conveyor layouts. Charts list specifications. Link-Belt Co.

L-25—Casters are described in 2-p. leaflet. Two colors. Illustrates five types of textile casters. Charts make selection easy and quick. Specific applications are discussed by type. Rapids-Standard Co., Inc.

L-26—Steel-mesh container guide details features, construction, and accessories. Photos illustrate special purpose units and actual textile plant applications. Union Steel Products Co.

L-27—Conveyor ideas relate cost-cutting techniques for material handling. Brochure, 4-p., contains 19 pictures with story captions. Covers package-conveyor problems. Standard Conveyor Co.

L-28—Trucks, electric and hydraulic pallet, are illustrated in 16-p. book. Separate pages describe specific models with specification data. Spread covers triple telescopic mast. Raymond Corp.

ELECTRICAL

L-29—Starters for fractional-horsepower motors are described in 8-p. Brochure 10-B1. Photos and description detail types. Engineering drawings show dimensions. Furnas Electric Co.

L-30—Power centers are related in 16-p. Bulletin GET-3041. Covers

. . . *Turn to page* 156

Let's clear the air about lint collection

Others talk about *maximum* lint collection . . . this one does it.

Koppers *new* MODEL F AEROTURN dust filter is not a modification of a filter designed for some other purpose. Nor is it an all-purpose unit. MODEL F AEROTURN has been designed from the ground up for the express purpose of collecting fibrous and linty materials with higher efficiency, greater economy.

The new Model F reduces clean-up expenses . . . improves the quality of your finished product . . . permits air recirculation with no loss of heating or cooling dollars. This unusual efficiency is a result of Koppers exclusive Reverse-Jet action, which assures top performance—even under the severest load conditions.

The compact, simplified design of Model F saves space and installation expense. Sturdy construction assures trouble-free operation. Install inside or out, for any capacity required.

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give faster, straighter cuts

Five Sizes for ⅛" to 6"

Pick up a RIDGID Heavy-Duty Pipe Cutter, and you'll instantly know why it makes pipe and conduit cutting far easier. Perfectly balanced . . . gives you a feel of confidence no other cutter can match. See the extra-long shank that protects handle threads . . . assures easy pressure application. Feel the large, smooth handle that gives you a comfortable, powerful grip. Try it, and you'll find a built-in cushion to keep the cutter wheel "on track" through hard or uneven spots. Rugged frame, guaranteed not to break or warp, stays straight for clean cuts every time.

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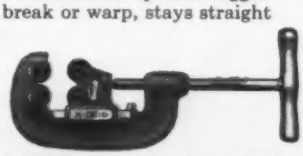

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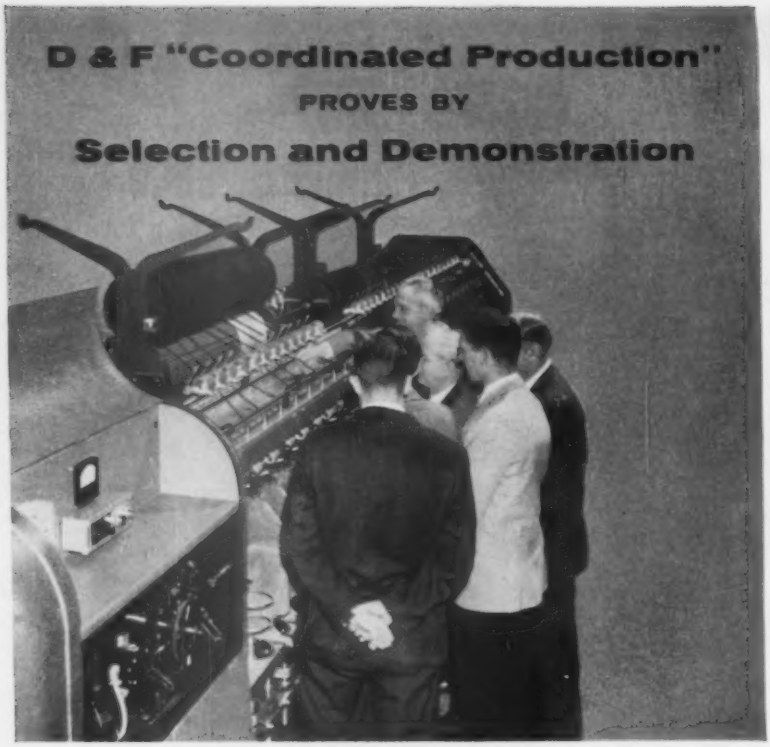

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NEW LITERATURE

. . . *Begins on page* 150

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

starters and circuit breakers. Includes overload relay heater data. Provides guide form for electrical equipment. General Electric Co.

L-31—Conduit is discussed in 60-p. publication, Bulletin 2722. Details application for hazardous locations. Drawings, installation photos, and product photos fully illustrate product. Crouse-Hinds Co.

L-32—Electrical enclosures are covered in Catalog SF. Construction details included. Useful for keeping detailed information at your fingertips. Machinery Electrification, Inc.

GENERAL

L-33—Floor repair and resurfacing for heavy traffic are discussed in this 4-p., 2-color report. Pictures and text take the reader from application through the finished product. Monroe Co., Inc.

L-34—Maintenance booklet in graphic photo-caption format is offered. Colorful and interestingly written, this booklet gives solutions for getting machinery repaired fast. LaSalle Steel Co.

L-35—Polystyrene film is featured in this 4-p. folder. Lists gage and yield, tensile strength, aging, printability, and tear strength. Film specifications are included in chart form. Visking Co.

L-36—Water demineralizers for the laboratory are listed in this 6-p. foldout. Photos, special applications, and complete descriptions of operations are included. Barnstead Still & Sterilizer Co.

L-37—Vertical milling machine is introduced in this 2-color bulletin. Labeled photos of component parts and graphic line drawings are featured. Includes specifications. South Bend Lathe, Inc.

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Never Before Such Sure-Fire Protection Against Threads And Lint!

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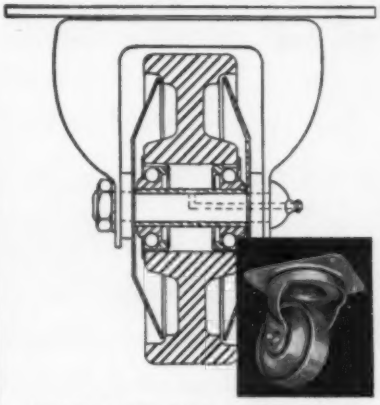
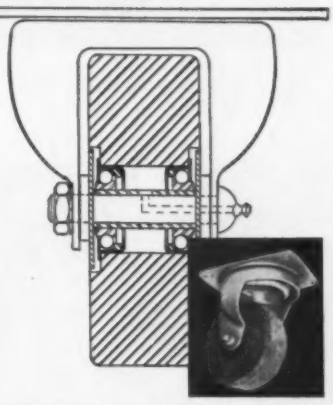


Precision cast, ballbearing semi-steel wheel—perfect concentricity; smooth, thick tread and big tread edge radius — protects floors and rolls and swivels easier. Threadguard protects in two directions: vertically, by tight fit to concentric inner edge of wheel tread; horizontally, by tight fit to molded step on web of wheel. Spacer washer, between threadguard and caster leg, eliminates V trap—allows lint and thread to fall free or, if caught, cleaning out without removing wheel. Available in 4 and 5 inch sizes.



"LAMILON", All-Plastic, ballbearing wheel permits standardization on one wheel for any section of the plant. Protects wood and concrete floors, resists sticking of ring travelers and gives excellent service in bleacheries and dye houses. Tight flush-face threadguard has very close fit in machined recess in wheel. Flush-face design decreases chance of falling lint and thread catching in wheel. Spacer washer, between threadguard and caster leg, eliminates V trap—allows lint and thread to fall free or, if caught, cleaning out without removing wheel. Available in 4 and 5 sizes.

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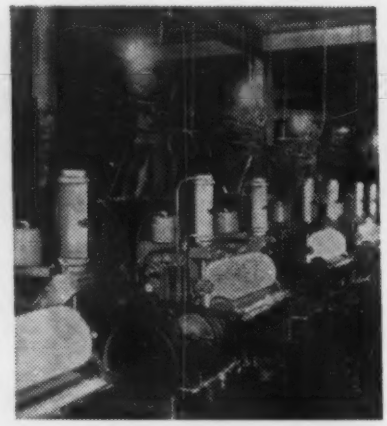

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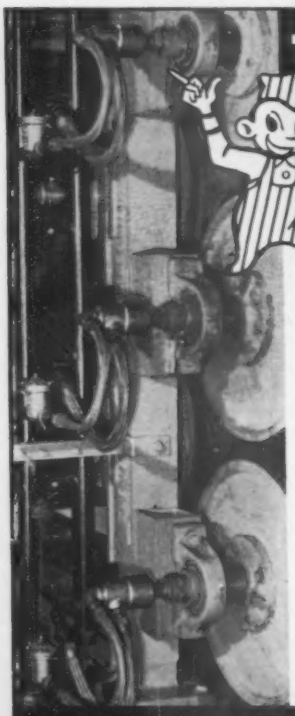

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TEXTILE WORLD . . .

Calendar

May

AATCC, New England Sections, joint meeting, Jug End Barn, Egremont, Mass., May 5 & 6

Phi Psi, annual meeting, Shoreham Hotel, Washington, D. C., May 5 & 6

Alabama Textile Operators Executives, spring meeting, Thach Auditorium, Auburn University, Auburn, Ala., May 6

Material Handling Institute, Eastern States Show, Philadelphia Trade & Convention Center, Philadelphia, Pa., May 9

Georgia Textile Manufacturers Association, Cotton Buyers Div., annual meeting, Dinkler-Plaza Hotel, Atlanta, Ga., May 11 & 12

Cotton Marketing Conference and Cotton Research Clinic, sponsored by the National Cotton Council, Peabody Hotel, Memphis, Tenn., May 16 & 17

North Carolina Textile Manufacturers Association, Cotton Buyers & Classers Div., annual meeting, Sedgefield Inn, Greensboro, N. C., May 18 & 19

National Associations of Woolen & Worsted Overseers, semiannual convention, Hotel Madison, Boston, Mass., May 19 & 20

Tufted Manufacturers Association, annual convention, Hotel Deauville, Miami Beach, Fla., May 24 to 27

June

AATT, monthly meeting, Della Robbia Room, Hotel Manger-Vanderbilt, New York, N. Y., June 7

Southern Textile Association, annual convention, Ocean Forest Hotel, Myrtle Beach, S. C., June 22 to 24

July

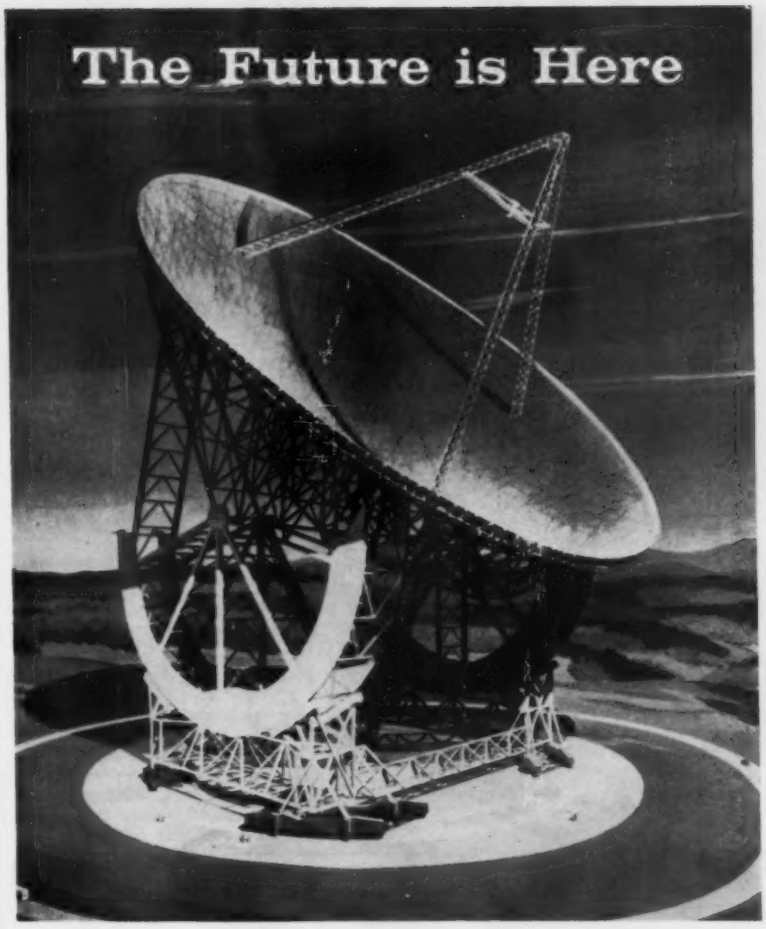
Gordon Research Conferences, Colby Junior College, New London, N. H., July 10 to 14

September

Combed Yarn Spinners Association, annual meeting, The Greenbrier, White Sulphur Springs, W. Va., Sept. 7 & 8

Carded Yarn Association, annual convention, The Cloister, Sea Island, Ga., Sept., 21 & 22

AATCC, national convention, Hotel Statler, Buffalo, N. Y., Sept. 27 to 29



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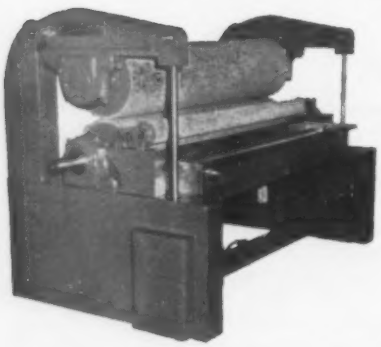

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A-350—Electrical motion control. For textile machinery controls write for full details and data. Warner Electric Brake & Clutch Co.

A-351—Traveling cleaners. Write for the following illustrated bulletins: Catalog 33A — Flooring Sweeper, Catalog 35A—For Roving Frames, Catalogs 21A, 34A—Overhead Cleaner, Catalog 37A—For Looms & Weave Rooms, Catalogs 32A, 33A—For Winders, and Catalog 32A—For Twisting and Spinning Frames. The Bahnson Co.

A-352—Pneumatic lap control system. Illustrated brochure on request. Livingston & Haven, Inc.

A-353—Rotary Joints. For joints for all needs write for Catalog J-2002. The Johnson Corp.

A-354—Unions and fittings. Yours on request is the descriptive brochure on unions and fittings. The Fairbanks Co.

A-355—Rotary union. Write for Bulletins 700 and 800. Perfecting Service Co.

A-356—Variable speed drives. For information write for Bulletin 6102. T. B. Wood's Sons Co.

A-357 — Floor finish. Will send without obligation, fact-filled technical bulletin. E. I. du Pont de Nemour & Co., Inc.

A-358—Cloth guide controls. Write for Catalog EG84 describing controls for cloth and web guiding systems. GPE Controls, Inc.

A-359—Vibration mounts. Sample and free book on request. The Felters Co.

Literature

A-360—AC catalysts. Write for complete technical data. Monsanto Chemical Co., Plastics Div.

A-361—Brighteners. Send for samples and literature. General Dyestuff Co.

A-362—Textile chemicals. Write for copy of booklet Chemicals for the Textile Industry. Rohm & Haas.

A-363—Screen printing machine. For illustrated catalog and samples of printed fabric. E. S. Rudnick.

A-364—Materials handling. For information on overhead systems write for Booklet 2008. Cleveland Tramrail Div., The Cleveland Crane & Engineering Co.

A-365—Valves. Write for Catalog 59-SS which describes stainless steel valves. Jenkins Bros.

A-366—Lint filter. For further facts write for Bulletin 234. American Air Filter Co.

A-367—Dry fluid drive. Write for technical bulletin for further information. Dodge Mfg., Corp.

Correction:

In the article "Agilon Edge-Crimped Yarn" (January 1961, p. 54), the editors listed the approximate cost of the machines F.O.B. England as Model 2110—$21,000; Model 2086—$15,000. This is reversed and should be Model 2110—$15,000; Model 2086—$21,000. TEXTILE WORLD regrets any embarrassment or inconvenience this error may have caused.

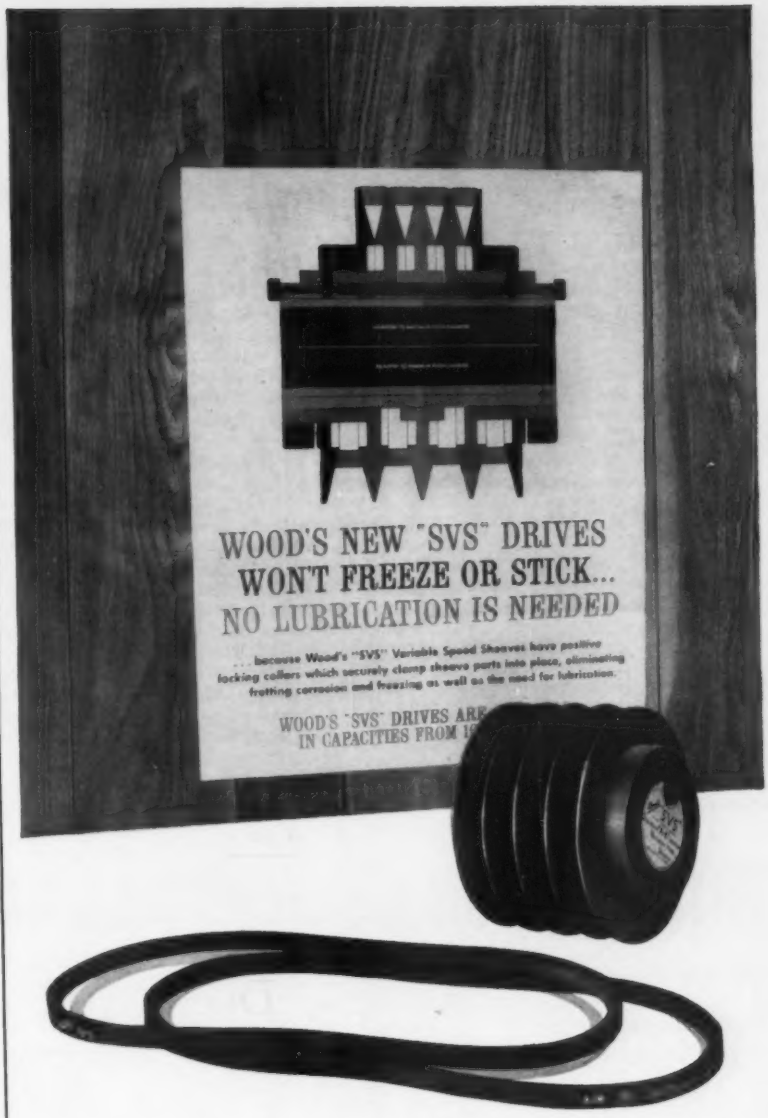
In the article "Putting Looms Back to Work" (February 1961, p. 114) the editors presented the formula:

$$\sqrt{P'} = \frac{3 \pm \sqrt{9+4\,np}}{2\sqrt{n}}$$

for determining the standard rate of loom stops. This formula should read:

$$P' = \frac{3 \pm \sqrt{9+4\,np}}{2\sqrt{n}}.$$

TEXTILE WORLD regrets any inconvenience this error may have caused our readers.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TEXTILE WORLD . . . News About Suppliers

AIR REDUCTION CO., INC., New York, N. Y.—Has formed a marketing organization for its newly formed division, Air Reduction Chemical & Carbide Co. G. E. Cole is general sales manager. J. K. Ames is sales manager of the Colton polymers department. . . . **ALLIED CHEMICAL CORP.,** New York, N. Y.—Has named W. A. Richardson associate sales manager for the Fiber Marketing Dept. of the National Aniline Div. He will be responsible for the sale of Caprolan nylon to textile customers in the southern states. . . . **ALLIS-CHALMERS MFG. CO.,** Milwaukee, Wis.—Has appointed W. T. Havron manager of industrial sales of the New Orleans district for its Industries Group. . . . **AMERICAN CYANAMID CO.,** New York, N. Y.—Has named W. H. Kieffer director of marketing of its Fibers Div. He will coordinate sales and merchandising operations for the company's acrylic fiber, Creslan.

AMERICAN PAPER TUBE CO., Woonsocket, R. I.—Has promoted S. F. Adams to general sales manager. . . . **AMERICAN VISCOSE CORP.,** Philadelphia, Pa.—Has resumed the direct sales of its Avisco industrial sewing threads. The company has also announced that it has named Leonard Brown sales representative in Detroit for its Industrial Packaging Dept. . . . **AVISUN CORP.,** Philadelphia, Pa.—Has promoted H. E. Wessel to director of marketing. Dr. W. P. Moeller has been named manager of its International Dept. . . . **BECCO CHEMICAL DIV., FOOD MACHINERY & CHEMICAL CORP.,** New York, N. Y.—Has completed construction of its new Midwest distribution center in Villa Park, Ill., and has started deliveries of hydrogen peroxide from this center.

C. W. COKER (left) has been named president of Sonoco Products Co., Hartsville, S. C. J. DAVIDGE WARFIELD (center) has been named vice president in charge of sales for Veeder-Root, Inc., Hartford, Conn. JAMES M. RICHBOURG (right) has joined the sales-engineering staff of Marshall & Williams Southern Corp., Greenville, S. C.

H. W. BUTTERWORTH & SONS CO., Bethayres, Pa.—Has started a sales-expansion program aimed at the textile industry. E. B. Norman is now working out of the home office, covering mills on the West Coast, New York, Michigan,

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Wisconsin, and Canada. . . . **CARY CHEMICALS, INC.,** New Brunswick, N. J.—Has announced that its subsidiary, Great Bay Chemicals & Plastic, Inc., is absorbing Regency Plastics, Inc., another of its subsidiaries. . . . **CELANESE CORP. OF AMERICA,** New York, N. Y.—Has announced that K. C. Loughlin has retired as president. The company has also announced that Bobina Faserwerke GmbH., jointly owned by Celanese and Farbwerke Hoechst AG., will start production of nytril fiber during the first quarter of 1962. The fiber will be marketed by Hoechst in Europe under the trademark Travis. . . . **CHEMSTRAND LTD.,** Coleraine, North Ireland—Is expanding its production facilities for Acrilan by 50%. . . . **CIBA CO., INC.,** Fair Lawn, N. J.—Has promoted C. O. Stevenson to manager of the Dyes Division. The company has also named R. D. Wiggins and D. A. Gardner to its southern district. Both men will be based in Charlotte, N. C.

CRUCIBLE STEEL CO. OF AMERICA, Pittsburgh, Pa. —Has named R. M. Simpson assistant director of sales. . . . **CURLATOR CORP.,** East Rochester, N. Y.—Has acquired Carolina Machinery Co., Inc. (Charlotte, N. C.), manufacturers of fiber-processing machinery for the textile industry. . . . **E. F. DREW & CO., INC.,** New York, N. Y.—Has named G. G. Armada sales-promotion manager of its Textile Chemical Dept. . . . **E. I. DU PONT DE NEMOURS & CO., INC.,** Wilmington, Del.—Has started commercial production of methylamines and their derivatives at its new plant in Belle, W. Va. . . . **FEDERAL PAPER BOARD CO., INC.,** New York, N. Y.—Plans to acquire Worcester Paper Box Corp., Medford, Mass., through an exchange of stock. . . . **FOSTER MACHINE CO.,** Westfield, Mass.—Is planning to operate a repair-parts warehouse in Belmont, N. C.

GENERAL ANILINE & FILM CORP., New York, N. Y. —Has named R. J. Holmes to the newly created position of

J. ROBERT POTTER (left) has been elected president and treasurer of Lockwood Greene Engineers, Inc. RICHARD W. KIXMILLER (center), an executive vice president of Celanese Corp. of America, has been placed in charge of the company's operations and activities outside the United States. J. W. BROOKS (right), an executive vice president, has been placed in charge of the corporation's four domestic companies.

acting product manager of the Blancophor product line for General Dyestuff Co., a division. The company has also announced that W. M. Dewing is retiring as New England branch manager for General Dyestuff Co. H. M. Hartnett will succeed Mr. Dewing. C. A. Bergman has been named market manager for chemicals for the division. . . . **GUBELIN INTERNATIONAL CORP.,** Mount Kisco, N. Y.—Has named Joel S. Perkins & Son, Gloucester City N. J., sales representative for New England, Delaware, Maryland, and West Virginia. . . . **HEYDEN NEWPORT CHEMICAL CORP.,** New York, N. Y.—Has promoted F. A. Degener to director of marketing for its Heyden Chemical Div. He had been general sales manager of the division. . . . **HOBBS MFG. CO.,** Worcester, Mass.—Has named R. P. Somoncini assistant sales

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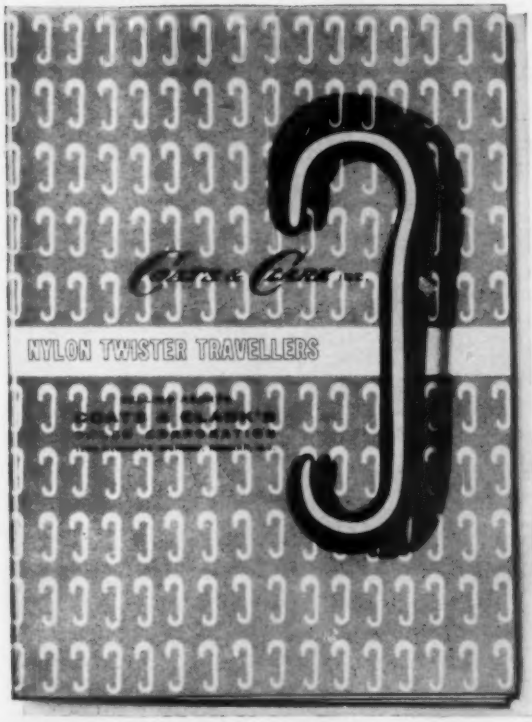

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J. T. PITTS (left) has been named sales manager of the Brown Instruments Div., Minneapolis-Honeywell Regulator Co., Philadelphia, Pa. BOB AIKEN (center) has joined the sales staff of the Textile Products Div., Texize Chemicals, Inc., Greenville, S. C. VERNON L. WILKINSON (right) has been named sales engineer for B. F. Perkins & Son, Inc., Holyoke, Mass.

manager of the company's Machine Div. . . . **INTERCHEMICAL CORP., COLOR & CHEMICALS DIV.,** Hawthorne, N. J.—Has named Bert Bresky export manager.

LOYAL T. IVES CO., INC., New Brunswick, N. J.—Has bought Crawford Mfg. Co., Inc., manufacturer of electric stop motions for circular- and flat-knitting machines. . . . **LEESONA HOLT LTD.,** Rochdale, Lancashire, England—Has completed transfer of its principal manufacturing unit to the newly converted Unity Works in Heywood. . . . **MAGNA-BOND, INC.,** Bala-Cynwyd, Pa.—Has elected Arthur Tuchinsky president. He succeeds R. L. Schiffer, who has resigned. . . . **MORELAND CHEMICAL PRODUCTS, INC.,** Spartanburg, S. C.—Has been sold by Moreland Chemical Co. to W. R. Irwin, I. S. Hurd, and an associated group. Mr. Irwin has been elected president. . . . **NATIONAL VULCANIZED FIBRE CO.,** Wilmington, Del.—Has acquired Fisher Mfg. Co., Inc., Hartwell, Ga., and will operate the new acquisition as the Fisher Div. J. G. Fisher, former president of Fisher, will be division sales manager for the textile industry.

NOPCO CHEMICAL CO., Newark, N. J.—Has named J. N. Gammon vice president in charge of sales for its Industrial Div. . . . **PENICK & FORD LTD., INC.,** New York, N. Y.—Has promoted G. M. Anderson to assistant sales manager of its Corn Refining Div., with headquarters in Atlanta, Ga. . . . **PENN-SALT CHEMICALS CORP.,** Philadelphia, Pa.—Has transferred its sales technical service groups to new laboratory facilities in King of Prussia, Pa. . . . **PHILADELPHIA GEAR CORP.,** King of Prussia, Pa.—Has started building a gear-research building and pattern shop. This new building is adjacent to the company's recently completed manufacturing plant and general offices in King of Prussia. . . . **SKF INDUSTRIES, INC.,** Philadelphia, Pa.—Has announced that construction of a new $2.5-million plant for Reed Instrument Bearing Co., a division, is underway in Los Angeles, Calif. . . . **SCIENTIFIC OIL COMPOUNDING CO., INC.,** Chicago, Ill.—Has changed its name to Scientific Chemicals, Inc. . . . **SOABAR Co.,** Philadelphia, Pa.—Has moved into its new plant at 7722 Dungan Road, in northeast Philadelphia. . . . **A. E. STALEY MFG. CO.,** Decatur, Ill.—Has changed the name of the export division to the Overseas Div. J. R. Shroyer has been promoted to export-sales manager in the new division.

UNION SPECIAL MACHINE CO., Chicago, Ill.—Has named Frank Stone a representative in Cleveland, Ohio. He succeeds Ray Hinton, who has been transferred to the Louisville, Ky., area. . . . **UTEX, INC., DIV. OF U. S. TEXTILE MACHINE CO.,** Scranton, Pa.—Has appointed J. A. Stein as a representative in the South. He will cover North Carolina and a part of South Carolina. A. W. Anderson has been named general manager of the division.

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TEXTILE WORLD... News About Men

A. N. WEEKS (left) has retired as vice president, director of production, and a member of the board of directors of the Bemis Bros. Bag Co., St. Louis, Mo. E. M. PROCTOR (right), who has served as assistant director of production for the company since last September, has succeeded Mr. Weeks.

Alec W. Anthony has been appointed assistant head of merchandising and sales of the Cotton Div., J. P. Stevens & Co., Inc., Greenville, S. C.

J. A. Arnau, Jr., has been named product manager of Agilon outerwear fabrics for Gayley Mills Corp., Marietta, S. C.

Arthur B. Borden has joined the Deering Milliken Service Corp., Spartanburg, S. C., as a consultant on weaving.

A. A. Brendle has been appointed director of product development, a new department of the Ca-Vel Div. (Ca-Vel, N. C.), Collins & Aikman Corp., New York, N. Y.

Charles J. Chaban has been appointed vice president of the newly established Research and Development Div., American Finishing Co., Memphis, Tenn.

Lewis Y. Chandler has been named superintendent of spinning, winding, warping, and reeling at Mayo Mills (Mayo, S. C.), division of Massachusetts Mohair Plush Co., Inc., New York, N. Y.

Paul E. DiBianco has been promoted to manager of the converting division of Cluett, Peabody & Co., Inc., Waterford, N. Y.

Harold F. Duncan has retired as vice president in charge of the domestic sales division of American Thread Co., New York, N. Y.

William D. Falkenstein has been elected a vice president of Cannon Mills Co., Inc., Kannapolis, N. C. He will continue, however, as western regional sales manager.

Joseph P. Foster has been promoted to superintendent of bedspread-finishing mill Fieldcrest Mills, Inc., Spray, N. C.

K. E. Fryfogle has joined Mount Vernon Mills, Inc., Baltimore, Md., as president of a newly established division to be known as Mount Vernon Dryer Felt Co.

William C. Greene has been elected assistant treasurer of Sayles Finishing Plants, Inc. and Special Fabrics, Inc., Saylesville, R. I.

Homer Hall will start a new assignment for Firestone Textiles (Gastonia, N. C.), division of Firestone Tire & Rubber Co., Akron, Ohio. He will work as an assistant to Bill Rhyne, manager of Firestone's Brazilian plant, and replace Rhyne when the latter comes home in 1962.

W. Giles Hunnings has been promoted to superintendent of the bedspread mill of Fieldcrest Mills, Inc., Spray, N. C.

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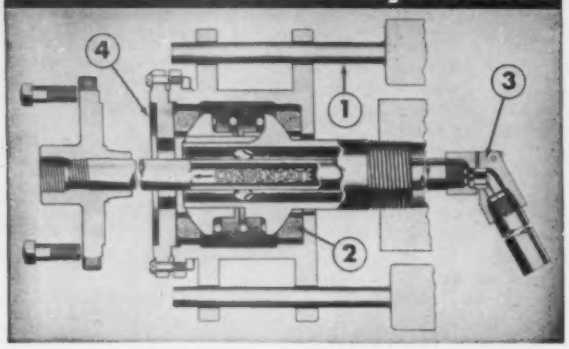

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SPECIALIZING IN TEXTILES SINCE 1914

Ralph E. Loper Co.

News About Men . . . *Begins on page* 165

HARRY P. SHEETS has been appointed cotton buyer and manager of the cotton department for Fulton Cotton Mills, Atlanta, Ga.

A. L. Jackson has been appointed acting manager of the bedspread mill of Fieldcrest Mills, Inc., Spray, N. C. He will continue his other duties as assistant to the vice president in charge of textile manufacturing.

Richard C. Jackson has been elected to succeed his brother, Robert, as president of Great Falls Bleachery & Dye Works, Inc., Sommersworth, N. H.

Victor F. Kahn has been elected a vice president of M. Lowenstein and Sons, Inc., New York, N. Y.

Bernard J. Kailer has been elected chairman of the Denim Council, New York, N. Y.

W. V. Kirkland has been named president of Charles H. Bacon Co., Inc., Lenoir City, Tenn.

Harold S. Landau has been named administrative assistant to the president of Allen Knitting Mills, Inc., Jamaica, N. Y.

Charles L. Langston has been appointed assistant sales manager of the Industrial Fiber Glass Dept., J. P. Stevens & Co., Inc., Greensboro, N. C.

John B. Love has been named general manager of the Willimantic Mills of American Thread Co., Willimantic, Conn.

E. Franklin Lowe has retired as manager of the converting division of Cluett, Peabody & Co., Inc., Waterford, N. Y. He will continue as a consultant to the companies converting division.

Ronald Lussier has been appointed weaving superintendent of Oakland Mills (Woonsocket, R. I.), recently purchased by Hanora Fabrics Co., New York, N. Y.

Nicholas G. Markoff has been assigned to the nonwoven fabrics division of Wellington Sears Co., New York, N. Y. He will be located in Atlanta, Ga., covering the South.

Preston F. Marshall has been appointed director of research for the fiber-products division (Walpole, Mass.) of The Kendall Co., Boston, Mass.

E. F. Mescall has been named director of the domestic-sales division of American Thread Co., New York, N. Y.

T. J. Meyer has been appointed to the newly created position of inventory planning and control for the Johnston Div. (Johnston, S. C.) of Riegel Textile Corp., New York, N. Y.

Joseph Morrissey has been named assistant manager of Carlisle Finishing Co. (Carlisle, S. C.), division of Cone Mills Corp., Greensboro, N. C.

Eddie W. Nodine has been appointed general overseer of carding at Mayo Mills (Mayo, S. C.), division of Massachusetts Mohair Plush Co., Inc., New York, N. Y.

William F. Piekarski has joined Troy Blanket Mills, Inc., Troy, N. H., as superintendent of the woven-fabrics division.

Harvey Raymond has been elected 1961-1962 chairman of the Corduroy Council of America, New York, N. Y.

Lawrence G. Reid has been named vice president and secretary of Washington Mills Co., Winston-Salem, N. C.

William H. Roeper has joined Millburn Mills, Inc., West Warwick, R. I., as superintendent of the new Durham (N. C.) plant.

Peter Sarfaty has been elected a vice president of Cannon Mills, Inc., with of-

RALPH D. SCHNEIDER has been elected vice president in charge of retail operations at Botany Industries, Inc., New York, N. Y.

PHILIP B. WHITING has been named treasurer, assistant secretary, and a member of the board of directors of the P. H. Hanes Knitting Co., Winston-Salem, N. C.

fices at Kannapolis, N. C.

Douglas H. Sears has joined Pepperell Mfg. Co., Boston, Mass., as treasurer.

Zeb V. Simmons has been named general overseer of spinning and synthetic preparations at Mayo Mills (Mayo, S. C.), division of Massachusetts Mohair Plush Co., Inc., New York, N. Y.

Arthur K. Stewart has retired as general manager of the Willimantic Mills of American Thread Co., Willimantic, Conn.

John Van Nest has been appointed manager of technical services for the woolen division of Amerotron Co. (New York), N. Y., a division of Textron Inc., Providence, R. I.

F. E. Wood has been promoted to overseer of weaving and roller printing at Callaway Mills Co., LaGrange, Ga.

F. K. Yarborough has been named chief corporate engineer for Riegel Textile Corp., Ware Shoals, S. C.

OBITUARIES

Dwight W. Ellis, 76, president, A. D. Ellis Mills, Inc., Monson, Mass.

Luther W. Faulkner, 78, retired executive, Faulkner Mills, North Billerica, Mass.

Ernest G. Glaesel, 69, retired chairman of the board, president, and general manager, Schwarzenbach Huber Co., New York, N. Y.

Hugh M. Grey, Sr., 64, president, Alamance plant (Concord, N. C.), a subsidiary of Kayser-Roth Hosiery Co., Inc., New York, N. Y.

Lawrence S. Holt, 77, president, Lawrence S. Holt & Sons, Asheville, N. C.

Everett H. Johnson, 60, retired senior vice president, Wellington Sears Co., New York, N. Y.

Edward P. Krebs, 71, former general manager of the former Abbott Worsted Co., Lowell, Mass. For the past two years he served as a consultant to the yarns division of J. P. Stevens & Co., Inc., New York, N. Y.

Oscar Leventhal, 60, former president of Quincy Dye Works, Inc (Woonsocket, R. I.), Quaker Pile Fabric Corp. (New York, N. Y.), and Providence Pile Fabric Corp. (Pawtucket, R. I.).

William A. Mackie, Jr., 66, treasurer, Mackie Spinning, Inc., Sumter, S. C.

Henry F. Martinat, 75, owner of Martinat Hosiery Mills, Inc., Valdese, N. C.

Bert Rutland, 79, retired consultant for customer relations with Cluett, Peabody & Co., Inc., Waterford, N. Y.

William Sirota, 60, president, Royce Hosiery Mills, Inc., Philadelphia, Pa.

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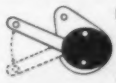

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(Continued on opposite page)

Frederick Krampf, noted child psychologist, enjoys reading in a ferris wheel.

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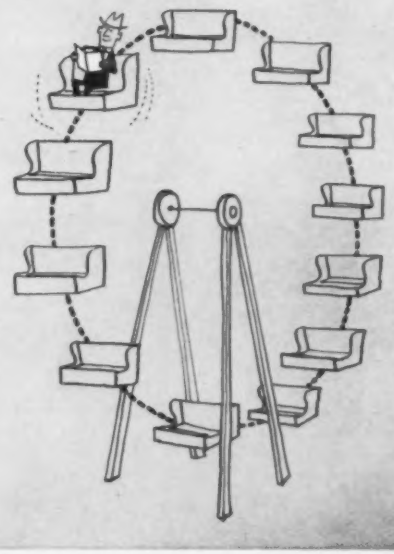

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2—V. V. Heavy Duty Tenter Frames, 60' x 66"

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44—SS Dry Cans 142" x 23" dia.

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36—Whitin Spinning Frames, 3¼" ga., Casablanca, 7½ hp.

62—Saco-Lowell Spinning Frames, 3¼" ga. Casablanca, 7½ hp.

12—Atwood Re-Draw, 68 spindles, 1950

56—Universal #10 Uptwisters, 184 spdls., 2 lb. headless pkge., 1950

3—Sipp-Eastwood Warpers, 1949 & Creels

3—Abbott Quillers, 1955

74—C & K W-3 AC Looms, 82"

234—C & K Big 6 S-6 Looms, 56" B.S., 1948

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1—Progressive 64" Examiner w/trumeter
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40—Whitin Spin. Frames Mod. B, 3½ ga., 228 spin.
1—Foster #57 Doubler Casablanca L.D. 60 spin. —Serial #360
4—Whitin B.B. Twisters—5" ga.,136 spin., wet or dry.
20—#50 Univ. Winders—pineapple—emulsion—M.D.
3—Thread Dressers 4" ga.—98 spin.
1—Fidelity Double End Skein Reel 44-72" skeins
2—Fidelity Single End Skein Reel 44-72" skeins
1—Cocker Dry Beamer 56"—Reeves vari-drive 550V
1—Hygrolet Yarn Conditioner
1—P & W 80" 2-Blade Dixie Shear
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12—Draper 40" XD Looms—#7 Dobby—1949

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1—Beamer Slasher Unit, takes 108" beam, heavy duty Beamer, starch box with S.S. rolls, 21 S.S. Cans 130" face x 23" diameter vertical stacks (some Teflon coated), Mixing Tanks with controls and Agitators, steel Creel holding 28 section beams.
1—Kearny Hydrolit Yarn Conditioner model AY.
1—Economy downstroke Waste Baler model #454.
4—Lazenby Cop Winders.
2—Single spindle Yarn Stripping Machines.
2—Skein Winders—30 spindle units.
1—Bit Winder—8 spindles.
1—P.S. Universal Twister, 120 spindles, 6" gauge.
10—Axminster Setting Frames 36".
3—Axminster Setting Frames 54".
5—Shawmut Axminster Threading Frames 36".
2—Shawmut Axminster Threading Frames 54".

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1—Lansdowne Wilton Jacquard Loom 12/4 (108") 252 pitch.
1—Lansdowne Wilton Jacquard Loom 12/4 (108") 180 pitch.
1—Tioga Wilton Jacquard Loom 12/4 (108") 252 pitch.
5—Lansdowne Wilton Jacquard Looms 16/4 (12') 252 pitch.
1—Tioga Wilton Jacquard Loom 16/4 (12') 252 pitch.
1—Lansdowne Wilton Jacquard Loom 20/4 (15') 252 pitch.
7—Crompton & Knowles ¾ (27") Axminster Looms, 7 pitch.
13—Crompton & Knowles 12/4 (108") Axminster Looms, 7 pitch.
5—Crompton & Knowles 15/4 (12') Axminster Looms, 7 pitch.
1—Crompton & Knowles 12/4 (9') Velvet Loom.
1—Jones 16/4 (12') Velvet Loom.
3—Jones 20/4 (15') Velvet Looms.

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1—Proctor 1954 model float type Carpet Dryer and Latex Unit for 15' wide material. Steel insulated Rock Wool Housing with 7 sections, each Unit (6'0" long each) consisting of 6 Drying Units and 1 Cooling Unit. Maxom Gas Pre-mix Heating Units designed up to 400° F., air operating Temperature Recorders, 14 motor driven Circulating Fans, 3 motor driven Exhaust Fans, motor driven Drum with PIV variable speed units and speed reducers, S.S. Tank with S.S. applicator roll, doctor blade and adjustable S.S. pan, 2 S.S. lined Mixing Tanks, roll type Roll-up.
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1—Whitin "Super Draft" Roving Frame, Model G8C including motor and drive—36 spindles.....$2500.

1—Davis and Furber Mixing Picker, 1957 Model, 36" cylinder, including motor .....$1250.

1—Saco-Lowell Intersecting Gill Box with motor and drive $350.

1—Saco-Lowell Intersecting Gill Box with creel, motor, and drive .....$400.

1—Warner-Swasey Model M-3650 Single head Pin Drafter with creel, oiling system and drive.....$3500.

1—Foster "Tensionmatic" Winder, Model 75, 12 spindles with motor and drive.....$750.

1—Henrici Laundry Machine, 24" x 24" including motor and drive .....$300.

1—Cummings "Landau" Dryer, 36" x 24" including motor and drive $250

1—"New Yorker" foot operated flat bed press complete with vacuum system .....$275.

1—Whitin Model "A" Axi-flow Cleaner, no motor.....$1250.

1—Reliable "Lusterette" Polisher for pile fabrics, Model L50 .....$50.

1—Whitin C-6 Nylon Draw Twister, 24 spindles including motor and drive.....$2500.

1—Autodynamograf fully automatic single strand strength and elongation tester with 10 bobbin creel.....$500.

2—Electric Dye Tables, 18 dyeing positions on each table each $100.

2—Universal Model 50 Coning Machines, 6 positions each, no motor .....each $250.

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1—Standard Mill Supply Rotary Piece End Sewing Machine, portable foot powered.....$125.

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12—C & K Non-Auto Looms, 82", Intermediate Head
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100 Spdls.—Whitin Schweiter Hi-Speed Bobbin Winders—1950
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50—C & K S6 Looms, 58" swords, 2 x 1 box, Age 1950-1
28—C & K S6 Looms, 56" swords, 15-4x1 box, 13-2x1 box, Age 1948-51
56—Draper XD Looms, 50", w/Unifil, Age 1953
72—Draper XD Looms, 46", w/Unifil, Age 1951
12—C & K W3 Looms, 82" swords, convertible, L.O. #14,300's
12—C & K W3 Looms, 82" swords, convertible, L.O. #14930
10—C & K W3 Looms, 64" swords, convertible, L.O. #14292
40—C & K W3 Looms, 72" swords, convertible, Age 1948
13—C & K Jacquard Rug Looms, 49" swords, 204 hook
120—Draper Model K Looms, 46" cloth, motor
38—Draper Model XK Looms, 46" cloth, dobby
1—Sipp-Eastwood DY Magnesium Sectional Warper, 84" w/600 end Creel, 4 lb. pkg.
3—Abbott Quillers, 100 spdls., Age 1952
1—BC Tying-In Machine, Model LS, motor
1—BC Tying-In Machine, Model LC, manual
1—Bachman-Uxbridge Model A Air Slasher, 82" wide
1—Whitin Model BB Ring Twister, 72 spdls. 6" ga.
3—Collins Fancy Twister, 160 spdls., 5" ga., 3¾" ring
1—Reiter Hi-Speed Comber, 6 heads,—1952
14—Reiner Hi-Speed Flat Knitters, 128" wide, motor
2—Laxenby Model T-Jr. Cop Winders, 30 spdls.
1—Abbott Paper Cone Winder, Model #65, 100 spdls., Age 1948
1—Uster Portable Tying-In Machine, Age 1948
1—Holdsworth Intersect. Bradford Gill Box—1953
1—Fletcher D.D. Uptwister, 40 spdls.—1953
1—Fletcher Stainless 30" Extractor, Auto. timer
1—Becco Continuous S.S. Bleach Range, J-Box, 2000 yd/hr. Saturator—1954
1—Morrison Williams Range 60", 15 ton, pad, 2—Williams Units, 3—washers, Vac. Extractor, MG Set—1948
1—Werner Hyd. Schreiner Calender, 47", 50 ton, 20 HP motor —1954
1—Verduin Hyd. Padder, 60", 15 ton
1—Morrison Micro-Set Pad, 60", 8 ton
1—P & S Loop Dryer, 60' long, 126" sticks—1948
1—Rodney Hunt Stainless Encl. 16' Dye Box
1—Rodney Hunt Tensitrol Washer 8'—1956
1—Burlington Stainless Pressure Beam Dye Machine—1959
2—Smith Drum Stainless Package Dye Units, 500 lb.—1948
1—Obermeir Stainless Package Dye Unit, 300 lbs.—1 carrier
1—P & W Hi-Speed Davidson Shear, 3 blades, 66½" wide—1947
3—Werner Stainless Encl. 70" dye Jiggs, no motors
1—Meadows Hyd. Embossing Calender, 72" wide, 25 ton—1949
1—Rodney Hunt Stainless 40" dye unit, pneu. padder
1—Rodney Hunt Stainless 2 comp't Washer, 80" wide, 2 squeezers
1—Smith Drum Stainless Sample Paddle Dye—1955

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12—D&F 120-spdl x 6½" ga x 5" r. MDL E WOOLEN SPINNING FRAMES.
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1—Warner-Swasey Single Head; Single Delivery 3650 Pindrafter.
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1—Foster Model 35A Cone Winder 8" Traverse.
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2—Steel Drum Roto-Coners, 20 and 60 Spindles for Cones.
1—S-L Derby Doubler for 40 ends of Sliver.

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Textile Machinery
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UNION, SOUTH CAROLINA

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STAINLESS STEEL MACHINES
3—3 ARM 2—5 ARM 1—7 ARM
CASCADE TYPE

6—ATWOOD 10-B's
2-LB. DOUBLERS
100 Spindles per Machine, 7" Ga.—8" Traverse Tapered Wind.

SUPERLOFTS
4 MODEL 551's
212 Spindles Each, 142,000 RPM Speed Machines Rebuilt in 1959-60. 2 Lb. Delivery Bobbins Available.

COCKER—80" DOUBLE SIZE BOX
60 Gal. Cap. Pneumatic—Stainless & Rubber Rolls

100 LB.— SMITH DRUM PACKAGE DYE MACHINE
80 Pkg.—⅝ Tube—Complete with Carriers and Brown Instruments

20 DYE BECKS
Stainless Steel—Open & Closed
From 2 Ft. to 16 Ft. Wide
From 32 to 60" Deep

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CALENDERS 1—V.V. 66"—20 TON
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Kettles — Foxboro Cycolog Controls

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20 Harness Dobby—Center Filing Fork. Weaves up to 46" cloth.

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5—B-C Knotters, Model LC, Hand & M.D.
2—B-C Knotters, Model LL, 13" & 56", M.D.
250—Kidde Double Disc Tensions
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500—22" Loom Beam Heads, 130T, 8P, Flush
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1—RB&F 44" 5 color print machine.
1—Himneckins Moire Calender 50" New.
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1—Johnson Sizer, 5 Copper Cans 66" Wide.
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PUT YOUR PIN TENTERS IN TIP-TOP CONDITION
SEND US OLD PLATE FOR QUOTATION
● Pins in Stainless, Monel, Plain Steel.
All Diameters Any Length
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P. O. BOX 486 ANDERSON, S. C.

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PRICES SLASHED

Modern Dyeing & Finishing Machinery of Ming Toy Dyeing Co., Paterson, New Jersey
MUST VACATE BUILDING

1—64" x 70' Enclosed Tenter Range, 60' Housing, Pneumatic Padder, Pre-Heater, Heat Setting Roller Curer. Hydraulic Batcher, Auto. Cut-Off.
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1—Tenter Range 60' x 50", 60" Pneumatic Padder & Palmerette.
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1—Morrison Tenter 50" x 50', S.S. Clips.
1—66" Heat Setting Roller Curer.
1—60", 2—50" V.V. 3 roll B.B. Calenders.
1—52" Hinnekens Boil-Off.
1—Open Width Washer 65", 3 compartments, 3 sets of rubber squeeze rolls.
1—65" Singer-long flame burners with motor driven brushes.
1—65" Textile Singer.
1—V.V. 73" B.B. Decatur.
1—60" and 1—50" V.V. Tubers.
2—68" and 64" Progressive Examiners.
1—54" V.V. Double Embosser.
4' to 12' S.S. Lined Dye Becks.
3—51" to 62" Beamers.
1—60" Eastwood Folder.
Chain Hoists 2 ton and ½ ton.
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1—750 HP Boiler, Steam Generator, Water Walls, 80,000 lbs. Steam per Hr.
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2—Maxon Heaters.
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Building for sale or rent, 85,000 sq. ft. Sprinklered, free water.

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SHerwood 2-1367-8

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DYEING • FINISHING • PRINTING MACHINERY

Partial List

1—Butterworth Junior Bleach Range.
2—8′ All Stainless Steel Dye Becks, 50″-60″ deep.
1—10′ and 1—12′ All Stainless Steel Dye Becks, 50″ deep.
1—Rodney Hunt 12′ Tru-Shade Enclosed Dye Beck, type 316 stainless.
14—50″-70″ All Stainless Steel Dye Jiggs, enclosed and open.
1—62″ Selvedge Marking Machine.
3—Singers, 60″—80″ widths.
1—80″ Double Acting Napper.
1—60″ Button Breaker, Bakelite rolls.
1—60′-60″ Palmerette—Tenter Range, M. G. Set.
1—57″ Compressive Shrink Machine.
7—Scutchers, 48″-78″ widths.
2—3 roll 50″ Calenders, 1—15 ton, 1—7½ ton.
1—Set of 6—54″ x 48″ diameter Stainless Steel Dry Cans, jacketed.
1—Set of 5—102″ x 23″ diameter Stainless Steel Dry Cans.
3—Tumblers, 46″ x 120″, fans and motors.
2—2 roll 50″ Padders, 7½ ton pressure.
9—Print Machines, 6—10 colors, 40″-64″ widths.
1—60″ High Speed Tuber.
1—Set 65″ Pneumatic Squeeze Rolls.
1—60′ x 50″ Mercerizing Range.

Your inquiries are invited — **We welcome your inspection**

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610 South Carolina Nat. Bk. Bldg. Greenville, South Carolina
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3—S.S. ROTARY DYERS—300, 100 & 50 LBS.

4—Atwood 10B—8″ Trav.—7″ Gauge—4¾″ Rings—1954

1—S.S. AUTOCLAVE—64″ x 73″ CONTROLS AND PUMP YEAR 1959

4—Fidelity Reelers—2 Arms
1—Whitin Model D Ring Twister
11—Unirails—Model 501
8—U. S. HDless Pkg. Twisters
70—Foster 75A Winders
S.S.Skein Dyers—1-12, 1-10, 1-7 Arm
4—Tubers w/ Yardage Clocks
10—Atwood & Sipp Redraws
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1—6′ and 3—4′x9′x30″ Stainless Steel Dye Becks with set of Riggs Lombard pneumatic Squeeze Rolls. 7½″ diameter, stainless steel bottom roll and rubber top roll.
1—5 Color RB & F Printing Machine, 44″, complete with Backrigging, Dry cans, Motor, etc.
2—90′x50″, 1—40′x54″, and 1—30′x72″ Winsor and Jerauld Tenter Frames.
4—Stainless Steel Dyetrucks 30″x36″x29″ deep with rubber wheels.
1—Butterworth Tenter Frame 75′ long x 200″ wide, complete with tension bars, take off. Housing 37′ by 20′ by 7′8″, turbine blowers, produce 30 degrees F. and Chromolux setting unit, 213″ rods, 459 degrees F, blowers, fans, etc.
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Padders up to 120″ wide.
300 Braiders from 12 to 72 Carriers.
Reeves Drives All Sizes. Opened and closed.
Stainless Steel Tanks.
Copper Jacketed Mixing Kettles.

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PROVIDENCE, R. I.

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3—Barber Colman Warp Tying Machines Models LL, LC
1—Sipp DX Magazine Cone Creel, 700 Live Ends —Warper
1—Cocker 60″ cloth rebeamer, 5 HP Reeves V. Dr.
4—Hacobas 1953, double headed Nar. Fab. Quills
1—Glodeo 16 Spindle Unit for N.F. Quills—1950
1—Whitin Quiller for Braider Bobbins, Model F-396 Spdles
13—New Eng. #3 Braiders with Mossberg 16 Carriers
24—W2 Worsted Convertible Looms 82″, High Roll
2—C&K Dobby Head Sample Looms, 20″ Reed,
25—Walton Reconditioned Humidifiers 110 Volt
3—Terrell Model L Strippers with Hoists
200—Wood Section Beams 54½ x 26″ dia x 9″ bble
400—Westinghouse Fluorescent Lights 48″—2 tube
250—Veeder Root 3-shift Resettable Pick Counters
200—Pr 22″ dia Draper Beam Heads 130T 8 Pitch
"NEDDLES, HARNESS FRAMES, DROP WIRES"

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now in operation

FS-6521, Textile World
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First, read the dealer ads on these pages. A 5-minute study may locate the equipment now.

Second, send in the specifications of the equipment wanted on the coupon below, or on your own company letterhead, to

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Equipment Locating Service
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Your requirements will be brought promptly to the attention of the used equipment dealers advertising in this issue. You will receive replies directly from them.

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Equipment Locating Service
c/o Textile World
P. O. Box 12, N. Y. 36, N. Y.

Please help us locate the following used equipment:

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NAME .....
TITLE .....
STREET .....
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CITY .....
ZONE.... STATE..... 5/61

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I am so sorry you are going to have to live under Communism.

It seemed to come so quickly.

I didn't think their lies could win.

I guess we were so busy with other things.

Not enough of us spoke up for freedom when we had the chance."

You can speak up for freedom right now

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The Freedom Center will provide research and library facilities for all individuals, groups and organizations seeking to defend and interpret the free American system. It will house the award-winning materials of over one million entries in Freedoms Foundation's eleven annual National Awards Programs.

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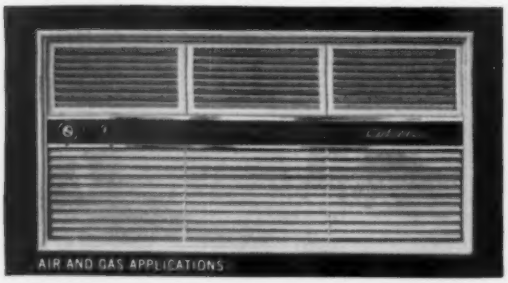

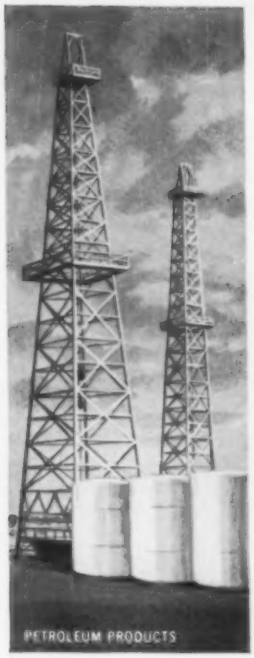

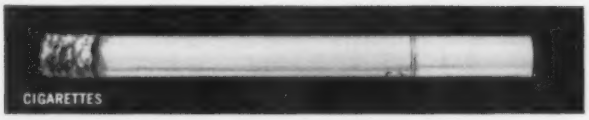

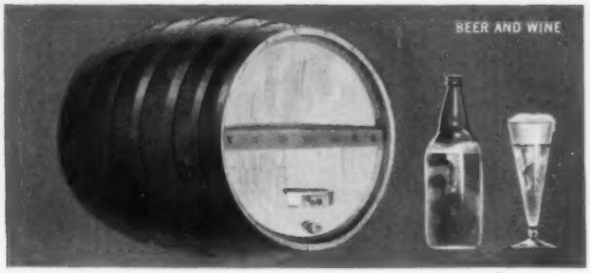

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